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# THE SURVEY

FEB 1 1931

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No. 1

## GENERAL NOTES

Attends Boone and Crockett Banquet; Addresses Forestry Conference.--Mr. Redington attended the annual banquet of the Boone and Crockett Club held in New York City on January 9. On January 22 he addressed the South Carolina Commercial Forestry Conference, at Columbia, S. C., on "Use of the Forest for Game Production."

Returns from Florida.--Mr. Henderson returned on January 26 from Florida, where he spent about three weeks attending to wild-life interests of the Bureau in that State, inspecting several bird reservations, and conferring with R. W. Williams, deputy game conservation officer, and Game Protector J. V. Kelsey at Daytona Beach on matters pertaining to the enforcement of the migratory bird treaty act and to the administration of bird reservations in Florida. His son Fletcher accompanied him on the trip, and before their return they made a short visit to Havana, Cuba.

The President Appoints Chief as Member of Timber Conservation Board.--Mr. Redington has been appointed by President Hoover a member of the President's National Timber Conservation Board, to study and recommend a sound and concerted program of public and private action with regard to the timber and forest industries of the country. The idea of the new board originated within the forest industries and has received the endorsement of conservation interests and public agencies generally. Facing the board is a serious economic problem in the supply and use of forest products that concerns the forest industries, persons dependent upon them for a livelihood, and the general public. The chairman of the new board is Secretary Lamont, of the Department of Commerce; and the other twelve members include Secretary Hyde, of the Department of Agriculture; Secretary Wilbur, of the Department of the Interior; and men prominent in forestry, agriculture, business, finance, science, and conservation, who are concerned with the future of forestry and the industries dependent upon it. Mr. Redington is named on the board in his capacity of president of the Society of American Foresters.

Foresters Meet in Washington.--With the conclusion of the annual meeting of the Society of American Foresters at the Wardman Park Hotel, Washington, D. C., December 29-31, 1930, Mr. Redington entered upon his third year as its president. On the program of the meeting were distinguished foresters not only from all parts of this country but from many foreign countries. The fact that about 300 members were present contributed greatly to the success of the annual gathering.

Status of Agricultural Appropriation Bill.--The Agricultural Appropriation Bill for the fiscal year 1932 as passed by the House of Representatives on December 19, 1930, and reported to the Senate on January 5 (calendar day January 14), 1931, carries increases for

the Biological Survey totaling \$323,850. Appropriations for the Bureau were passed as submitted in the Budget, with the exception of a reduction of \$340 in administrative expenses for under-average salary-grade adjustments and an increase of \$13,500 in maintenance of mammal and bird reservations for the purchase of privately owned land adjacent to Niobrara Reservation. The details of the increases as submitted in the Budget may be found in The Official Record for January 1, 1931.

Conservation Measures Pass House.--The House of Representatives on January 5, 1931, passed a bill (H. R. 13276) to establish the Needles Rock Wild Life Refuge in Pyramid Lake within the Pyramid Lake Indian Reservation, Nevada. On January 19, the House passed a bill (H. R. 11285) to amend the Alaska game law of 1925 (43 Stat. 739) by correcting certain inequalities in license fees, coordinating the fiscal activities of the Alaska Game Commission under the Department's commissioner for the Territory, and effecting certain other administrative changes, which, if the bill becomes a law, will greatly facilitate the work of the Commission, especially in its field operations.

Official Publications.--The following publications of the Bureau have been received:

- "American Moles as Agricultural Pests and as Fur Producers," by Theo. H. Scheffer. Farmers' Bulletin 1247-F (revised), 21 p., illus. Received December 16.
- "Rat Proofing Buildings and Premises," by James Silver, W. E. Crouch, and M. C. Betts (Bureau of Public Roads). Farmers' Bulletin 1638-F, 26 p., illus. Received January 9
- "Red-Squill Powder in Rat Control," by James Silver and Dr. J. C. Munch. Leaflet 65-L, 8 p., illus. Received January 22.
- "Homes for Birds," by E. R. Kalmbach and W. L. McAtee. Farmers' Bulletin 1456-F (revised), 22 p., illus. Received January 26.

Address Biological Society.--At the meeting of the Biological Society of Washington on January 10, Dr. W. B. Bell gave a talk, illustrated with motion pictures, on "Reestablishment of Musk-Oxen in Alaska." At the January 24 meeting of the Society, A. H. Howell conducted an exhibition of paintings of Florida birds by F. L. Jaques to be used in Mr. Howell's forthcoming book on "Florida Bird Life"; Vernon Bailey gave an illustrated talk on the general features and the wild life of the Upper Mississippi River Wild Life and Fish Refuge; and Francis M. Uhler spoke on the waterfowl and reptile life of this refuge, his talk also being illustrated with lantern slides.

THE SURVEY Committee for the year 1931 as designated by Mr. Redington consists of W. C. Henderson, chairman; Edward A. Preble, representing the Division of Biological Investigations; E. R. Kalmbach, Food Habits Research; Frank G. Ashbrook, Fur Resources; Albert M. Day, Predatory-Animal and Rodent Control; W. R. Dillon, Dr. T. S. Palmer, and Miss Clara Ruth, Game and Bird Conservation; Arthur A. Riemer, Land Acquisition; E. J. Thompson, Administration Offices; Lisle Morrison, Exhibits and Photographs; Wm. H. Cheesman, Editor; and Paul H. Oehser, Assistant Editor.

#### BIOLOGICAL INVESTIGATIONS

Attend Meeting of Scientists.--Doctor Bell, Dr. H. C. Oberholser, Dr. W. P. Taylor, and F. C. Lincoln attended the annual meeting of the American Association for the Advancement of Science, held in Cleveland, Ohio, December 29, 1930, to January 2, 1931. As a contribution to a symposium on ecological interactions between plants and animals at the meeting of



the Ecological Society of America, Doctor Bell presented a paper on "Some Important Problems of Plant and Animal Relationships," and Doctor Taylor contributed an article on "Pine and Porcupine" based on his extended studies of the animal in the Southwestern States. F. C. Lincoln attended the sessions of the Inland Bird Banding Association held during the same period and presented a paper on "Bird Banding"; and Doctor Bell, Doctor Oberholser, and Mr. Lincoln were present at the annual dinner of the Wilson Ornithological Club on December 30, on which occasion Doctor Oberholser gave a talk on "The Present Status of American Waterfowl."

Investigate Predatory-Animal Control Work. -- The following biologists of the Bureau spent most of November and December investigating conditions surrounding the control of predatory animals in the West: Vernon Bailey, in Oregon, Washington, and Montana; E. A. Goldman, in Nevada, California, Oklahoma, and Arkansas; Dr. W. P. Taylor, in Arizona, New Mexico, and Texas; S. B. Locke, in Utah and Idaho; and O. J. Murie, in Wyoming and Colorado. All the field work on this investigation has now been completed. The American Society of Mammalogists, which is cooperating with the Bureau in this investigation, was represented by Dr. C. T. Vorhies, of the University of Arizona, in the Southwest; E. L. Sumner, Jr., of the California State Game Department, and E. Raymond Hall, of the Museum of Vertebrate Zoology of the University of California, in the California-Nevada region; G. G. Goodwin, of the American Museum of Natural History, in Idaho and Utah; and T. D. Carter, of the American Museum of Natural History.

Change in Forest-Fauna-Research Personnel. -- Oliver L. Austin, Jr., for the past year in charge of the Bureau field work under the McSweeney-McNary Forestry Research Act at the Lake States Forest Experiment Station at St. Paul, Minn., has been transferred to the bird-banding project, effective February 1. For the past few months Mr. Austin has been on leave without pay, pursuing graduate studies at Harvard University, and has now completed the requirements for the degree of doctor of philosophy. His new work will be concerned with field work in bird banding in the Eastern States.

Clarence M. Aldous, who has been connected with the Survey since December, 1929, as junior biologist and assistant in predatory-animal and rodent control in the New Mexico District, has been transferred, effective February 1, to the Division of Biological Investigations as assistant biologist to take charge of the forestry research work formerly conducted by Mr. Austin at St. Paul. Mr. Aldous holds the degree of master of science from the University of Minnesota and has had much experience along biological lines to fit him for his new work.

Use of Italian Bird Nets in Banding Work Discouraged. -- In a recent letter to one of the Bureau's bird-banding cooperators, Mr. Redington stated the policy of the Survey in regard to the use of so-called Italian bird nets, or flue nets, in banding work. In reply to the cooperator's request that official sanction be given to import these nets for use at his banding station, it was made plain that experiments conducted during the past year show that although as a general rule these nets are efficient in taking birds for banding purposes without injury, the percentage of birds injured or killed through their use is now larger than when cage traps are used, and that for this reason the Bureau does not sanction their general use. "From the very beginning of the banding work," it was stated, "there have been persons who were uninformed but who nevertheless lost no opportunity to voice their opposition to studies through the banding method. Because of the great care continually taken by cooperators, this opposition has been gradually overcome until at the present time it is rarely heard. We must be careful not to do anything that would cause this opposition to flare up again, and it is for this reason mainly that the policy of the Survey

at the present time concerning the use of these nets is that they be restricted to definite projects and used only by bona fide employees of the Bureau. Experimental work with these and other types of nets will be followed up at every opportunity. . ."

New Book on Waterfowl.--Dr. John C. Phillips and Frederick C. Lincoln are the authors of a new book of more than 300 pages, entitled "American Waterfowl: Their Present Situation and the Outlook for Their Future," which has been described in a review in The Condor, as "a classic in the general literature of conservation." The authors give generous acknowledgments of assistance received from many present and former members of the scientific staff of the Bureau, including "Mr. Paul G. Redington, Chief of the Biological Survey, for friendly advice and cooperation," and dedicate their book to Dr. Edward W. Nelson, former chief of the Bureau, "in recognition of his many years of service in the cause of American wild-life conservation." The eleven chapters discuss the breeding areas, wintering grounds, and migrations of North American waterfowl; such factors adverse to their welfare as drainage, shooting, poisons, diseases, parasites, natural enemies, and oil pollution of the waters they frequent; conservation of waterfowl in general and of their food plants; and methods of taking ducks, "with remarks on the ethics of the various practices." An appendix gives the classification, scientific and common names, and ranges of waterfowl, with notes on the present status and factors affecting the abundance of the 40 North American species, and the body weights of males and females. Special stress is laid in the book on the evils of drainage and the importance of returning many drained areas to their natural state. Emphasis is also laid upon the possibility of safely encouraging the presence of fur bearers and other so-called "vermin" on areas preserved for waterfowl, and a point is made in favor of the private gun clubs, with the gradual passing of free shooting, as being grounds where rules are well observed, including those regarding crippling of birds and the prevention of waste of game. Policies are suggested regarding sportsmen's field methods, limitations on shooting, and other conservation matters. The book is attractively illustrated by Allan Brooks and A. L. Ripley, and is published by Houghton Mifflin Company.

Banded Tern Captured by Falcon in West Indies Reported from Europe.--The recovery of banded birds has been effected in many ways, but the Survey has just received its first return through the use of a trained hawk. The bird, a common tern with band No. A365745, was captured October 1, 1930, by a sparrow hawk ("epervier," as it was called in the French paper Le Chasseur Francais), owned by a fisherman on the island of Guadeloupe, Lesser Antilles. The tern was banded on July 5, 1930, by a cooperator of the Biological Survey, at Tern Island, Chatham, Mass. It is believed that the captor was the European sparrow hawk, which is closely related to the American sharp-shinned hawk, but even so, a tern would seem to be a remarkably large bird for it to capture. The European sparrow hawk was used extensively in the days of falconry, being flown chiefly at blackbirds and starlings. This return has a double interest in that it was reported by two ornithologists from two European countries. The first came from Prof. Robert Poncey, of Geneva, Switzerland, and the second from Peter Skovgaard, of Skovbo, Viborg, Denmark. Both of these men are regular correspondents of the Biological Survey and have reported previous return records of its bands to the Bureau. Mr. Skovgaard is himself conducting studies by banding and has supplied the Survey with specimens of his bands, which carry a serial number and the legend "Adresse P. Skovgaard, Viborg, Danmark, Europa." On the smaller sizes the words "Adresse" and "Europa" are omitted.



Attends Bird-Banding Meeting.--F. C. Lincoln attended the meeting of the Northeastern Bird Banding Association and the Federation of Bird Clubs of New England, at Boston, Mass., on January 16. Three sessions were held and the estimated attendance was about 200. At the close of the meeting, at the Cohasset home of Lawrence B. Fletcher, president of the Northeastern Bird Banding Association, Mr. Lincoln was among the week-end guests, who in field trips along the coasts had opportunity to observe the rare purple sandpiper, the Ipswich sparrow, and large numbers of ducks, mostly black ducks.

visits Washington Office.--Dr. W. P. Taylor, stationed at Tucson, Ariz., spent several days during the early part of January in Washington, and was thus afforded an opportunity to confer with a number of people in this and other departments regarding the special project upon which he is engaged, especially the relation of the porcupine to the forests of the Southwestern States.

Biological Aide Appointed.--Mrs. Adelaide B. Woolley was appointed junior biological aide, effective January 3, 1931, by transfer from the Census Bureau. She will assist in handling the bird-migration and distribution records and performing work connected with the maintenance of the ornithological collections. Mrs. Woolley in 1916 (then Miss Beck) was connected with the Survey as student assistant in this Division.

#### FOOD HABITS RESEARCH

Game-Bird Conditions in Michigan.--From January 8 to 15 Wallace B. Grange was in Williamston, Mich., in connection with the cooperative game-bird studies. Fifty-one winter feeding stations for birds have been placed at strategic points in the township; an excellent cover map has been prepared by the School of Forestry and Conservation at Ann Arbor; a soils map has been completed by the Michigan State College; and plans are under way for the actual management of game-bird cover in the township. Of particular interest are some of the hunters' tallies for the season just past, obtained from report cards issued the hunters by the farmers on whose property hunting began. The cards indicate surprisingly small bags of upland game. Evidently there is plenty of room for increase in numbers of birds. Hungarian partridges and quail were seen during the field work south of Ann Arbor. The food supply is noticeably short. Cooper's hawks are reported to be unusually numerous, and, in fact, one was started from a hedge used by quail, a dead pigeon and the feathers of a quail indicating the reason for its presence. There is little question that the present winter will be very critical for game birds in that section if severe weather occurs. Up to the present time, however, the weather has been mild, with little snow.

Results of Season's Duck-Disease Studies Published.--In Science (vol. 72, pp. 658-660, Dec. 26, 1930) appeared a resume of the past summer's field work on duck sickness by E. R. Kalmbach. With it was a brief statement regarding the results of bacteriological studies on the same problem conducted, mainly in Washington, by Dr. L. T. Giltner and Dr. J. F. Couch, of the Bureau of Animal Industry. These two articles summarize the facts disclosed during the past year and reveal the evidence that has led to a marked change in ideas concerning the cause of this malady among waterfowl. While there still are a few links missing in the chain of evidence needed to complete the story, there is no question that the symptoms of duck sickness found in the field are identical with those produced by the type of botulism known as strain C. The following extracts from the article by Mr. Kalmbach present some of the more important findings made in the course of field laboratory experiments:

"Duck sickness symptoms, including the paralysis or weakness of the wing, leg, and neck muscles, the paralysis of the nictitating membrane, discharges from the eyes and nostrils, difficulty in breathing, a lowered body temperature, and green diarrhea, all have been accurately and repeatedly reproduced by the feeding of the incubated body tissues of birds that have died of duck sickness after this material has been kept at a temperature of 85° Fahrenheit for 5 or more days... Allowing for variations due to the factor of individual susceptibility, the rapidity and severity of the onslaught of symptoms appears to be directly proportional to the quantity of material fed. In the case of mallards and pintails, single doses of from 1/20 to 1/10 gram have permitted the birds to recover within four to six days in some of the cases, while doses as great as 1/2 gram to 1 gram usually have proved fatal within 12 to 24 hours...

"The faithfulness and consistency with which duck sickness symptoms are produced by this method has never been even remotely approached in any experimental work that the writer has done through the feeding of natural or synthetic alkalies... Material obtained from the Bear River Marshes at Great Salt Lake has given results identical in every respect with that collected in the Klamath region. ...Contraction of duck sickness in the field does not establish an immunity to the symptoms as produced by this method, since birds that have recovered from duck sickness have been used two and three times in these experiments with positive results."

From the contribution by the Bureau of Animal Industry it is learned that "bacteriological examination of the mud (of Tule Lake, Calif.) disclosed the presence of Clostridium botulinum, Type C. The primary cultures of the mud produced a toxin of rather high potency.

.. Furthermore, C. botulinum, Type C, has been cultured from the tissues of wild mallards, pintails, and ring-billed gulls that had died of or were killed while afflicted with 'duck sickness.' The clinical picture coupled with the isolation of botulinus organisms from the mud of Tule Lake and the sick birds themselves, suggests that duck sickness is produced by the toxin of C. botulinum, Type C."

Additional experimental work is now in progress in Washington. These recent studies have yielded interesting results, some of which may explain why duck sickness does not appear in all areas that are apparently suitable.

Visits Washington after Attending Bird Banding Meeting. -- Herbert L. Stoddard, co-operative agent, of Thomasville, Ga., formerly in charge of the field work of the Cooperative Quail Investigation, called at offices of the Survey on January 19 en route to the South, after attending the joint meeting of the Northeastern Bird-Banding Association and the Federation of the Bird Clubs of New England at Boston, Mass., on January 16. Mr. Stoddard presented a paper at the meeting on "Habits of Quail," illustrated with motion pictures.

Martin a Flycatcher? -- Notwithstanding a 5-second handicap at the start, A. C. Martin, of Food Habits Research, demonstrated that he still retains his collegiate prowess in the 440, when he captured a thief on the fly, who had been picking pockets in a near-by office in Building F. The capture was just before the lunch hour on January 27. The fugitive was well down the stairs of Building F before the alarm was sounded, but Martin overhauled him before he had reached the adjacent Smithsonian Building and turned him over to the police.

#### FUR RESOURCES

Visits Fur-Animal Station. -- After a short visit during the Christmas holiday season with his mother at York, Pa., Mr. Ashbrook went to Saratoga Springs, N. Y., and inspected the United States Fur-Animal Experiment Station. Before returning to Washington he spent several days in New York City gathering information concerning conditions in the fur trade.



Studies Rabbit Industry in the East.--While in Washington, John W. Meyer, director of the Rabbit Experiment Station at Fontana, Calif., visited several rabbitries in the vicinity to study housing conditions. Immediately after the holidays he accompanied Mr. Ashbrook on his inspection tour of the United States Fur-Animal Experiment Station, at Saratoga Springs, N. Y., and then went to New York City to study the methods employed in sorting and handling raw rabbit skins in the large fur houses. Before returning to Washington Mr. Meyer visited a large meat-packing establishment in Pennsylvania, one of the largest packing plants in the Eastern United States that handle rabbits. He left Washington for Fontana, Calif., on January 15 and plans to stop en route at Chicago, Minneapolis, Omaha, and Denver.

Drought Causes Shortage in Muskrat Catch.--In the latter half of December, Dr. J. E. Shillinger and Frank R. Smith, newly appointed agent, examined a number of muskrat marshes and muskrat-farming projects in New Jersey, Delaware, and Maryland and found that the coastal and bay marshes are in poor condition, owing to the drought. A pronounced shortage of fresh water flowing into these marshes has caused a greater concentration of salt water in them than usual, and much of the marsh vegetation on which the muskrats thrive has been killed by this high salinity. Other areas ordinarily of a marsh nature suitable for these animals are completely dry. These conditions are especially noticeable on the Maryland marshlands, and in that State the muskrat catch is expected to be only a small percentage of that of average seasons. In the muskrat-farming projects, the animals kept in small pens are generally in an unthrifty condition. It is evident that the advice given by the Survey that this method of producing muskrats is unprofitable is reliable.

Radio Interview on Rabbit Meat.--Mr. Ashbrook, on January 29, participated with specialists of the Bureau of Home Economics in a radio symposium on the subject of domestic rabbit meat, broadcast in the Department's noon network series from Station WRC and 39 other radio stations associated with the National Broadcasting Company.

Chosen Leader of 4-H Club Group.--For the past several years, the personnel of the Rabbit Experiment Station at Fontana has been actively interested in 4-H clubs. Allan E. Suitor, an assistant at the station, has this year accepted the leadership of the 4-H Rabbit Club in Fontana, which from present indications gives promise of developing into one of the outstanding clubs in the State. Both Mr. Meyer and Mr. Suitor find many opportunities to demonstrate better methods of rabbit raising to such interested groups.

Pelting Season at Fur-Animal Station.--Dr. K. B. Hanson, in charge of the Fur-Animal Experiment Station, at Saratoga Springs, reports that 44 silver, red, and cross fox pelts were taken at the station this month and were of very good quality.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Conducts Trapping School in North Carolina.--Albert M. Day spent several days during January giving instructions on the trapping of bobcats and other predators for the benefit of forest rangers employed on the Pisgah National Forest, near Asheville, N. C.

Articles on Rodent Control Are Prize Winners.--Ernest M. Mills, leader of rodent control in the New England District, again this year won a prize in a magazine-story contest, with an article entitled "Middlesex County's Fatal Feast," describing the first county-wide rat campaign in the district in which red squill was used. The first and third prizes offered to county agents for the best circular letters were given on those describing rat campaigns; while the publicity material used in project campaigns submitted by county agents



that received second and third awards also dealt with rat elimination. The second prize given for newspaper articles prepared by county agents was awarded for an article on the distribution of poisoned bait by the Bureau's central mixing station at McCammon, Idaho, for the control of field mice in the East.

Hunter Sticks to Lion Trail.--George E. Holman, leader of predatory-animal control in Utah, relates that on November 20 Hunter John W. Willis observed the tracks of an adult and a young mountain lion. He put his dogs on the trail and in a short time the old animal was discovered. It ran into a cave in the rocks in an extremely inaccessible area. The hunter returned to the cave repeatedly during the next three days before he found evidence that the lion had left its hiding place. On the morning of the 23d he took up the trail again with his dogs, and after going a short distance found where the lion had killed and fed upon a deer. After a chase of about 6 miles the dogs treed a large female lion. Hunter Willis certainly believes in keeping after the animals until he gets them.

Hunters Assist in Unemployment Problem.--Mr. Holman reports that because of lack of funds it became necessary either to lay off a number of hunters for the rest of the year or to arrange the work so that all the men could be employed during part of the time. He wrote to each hunter describing the situation and asking him what he thought should be done in the matter, and practically every one replied that he was willing to take some time off during the winter months rather than that any of the hunters should be entirely out of employment. Accordingly, Mr. Holman worked out a program whereby the entire force is to be kept on the roll, each hunter taking a comparatively short leave without pay.

Coyote Control Decreases Losses during Lambing Time.--E. R. Sans, leader of predatory-animal control in the Nevada District, reports that a stockman in an area that had not been worked by Bureau hunters lost 54 out of 60 lambs during the first night of lambing through the depredations of coyotes. At the same time another stockman ranging sheep just across the mountain where Survey hunters had thoroughly worked the range reports that no damage by coyotes occurred during the lambing season. Mr. Sans advised that special control efforts are being put forth in areas where depredations are worst.

Coyotes in Georgia.--Information has been received from the Forest Service that coyotes are present in Habersham County, Ga. Although not numerous in the area, according to reports they have destroyed pigs, sheep, and poultry.

Pocket-Gopher Control of Assistance in Aviation.--In a recent letter to the Bureau the secretary of the Chamber of Commerce of Mineola, Tex., commends the work in pocket-gopher control of A. E. Oman, assistant in the Texas District. Special mention of the work done under Mr. Oman's supervision on the aviation field near the city is made as follows: "Our landing-field ground was practically ruined as a result of these pests (pocket gophers), planes could not land in safety, and we did have one plane to wreck as a result of these pests. Your Mr. Oman came to our rescue, put on a public demonstration on Saturday afternoon, and as a result we do not have a single salamander (pocket gopher) sign at this time; in other words he cleaned them out for us and saved our ground."

Wolf Control Makes Poultry Raising Profitable.--The secretary of the Ardmore, Okla., Chamber of Commerce, has informed A. E. Gray, leader of predatory-animal control in the Oklahoma-Arkansas District, that as a result of wolf control in Carter County, the farmers living in an isolated valley 3 miles west of Springer sold poultry and turkeys during November and December valued at \$10,000. Ten years ago this community produced and sold large

numbers of hogs and poultry, but the increase in wolves since that time made it impossible to raise them profitably until this year, after control operations had been undertaken.

Congratulations are extended to Mr. and Mrs. Elmer T. Heward, of Reno, Nev., on the birth of a daughter on January 1. Mrs. Heward was employed for several years as clerk in the Reno office, having resigned that position on December 31.

Appointments and Transfers.--Lawrence Cheney, who has been employed as hunter for several years in the Wyoming District, was appointed junior leader of predatory-animal control, effective January 12, to assist Leader R. E. Bateman in Montana. Bernard F. Lowery, who for several years has been a laboratory assistant at Denver under the Custodial Service, recently qualified for appointment under the sub-professional service, and has been appointed assistant biological aide, effective February 1. Curtis Leslie Bohlscheid was appointed agent, effective January 16, to assist T. B. Murray, leader of rodent control in Idaho. This appointment fills the position made vacant by the transfer of Paul T. Quick from the Idaho District to the Control Methods Research Project. Mr. Bohlscheid has had considerable experience in rodent-control work obtained through previous temporary employment in the Idaho District.

Miss Ferne B. Reynolds has been transferred from the Internal Revenue Service, at Portland, Oreg., to the predatory-animal control office at Billings, Mont., in an exchange of positions with Mrs. Elizabeth Standley. Mrs. Hilda B. Lyons was transferred from the Washington office of the Bureau of Plant Industry to the Reno, Nev., office of the Survey, effective December 29, to fill the position made vacant by the resignation of Mrs. Edna T. Heward. Mrs. Gertrude M. Hinrichsen, effective January 16, was transferred from the Veterans Bureau at Portland, Oreg., to the Division's office at Cheyenne, Wyo., to fill the position of clerk in that office that will be vacated by E. M. Muse, who will be transferred to Phoenix, Ariz. Mr. Muse was formerly employed in the Accounts Office in Washington.

From the Chicago Evening Post.--"A Government hunter in Arizona has killed 2,300 coyotes, 700 bobcats, 28 wolves, and 18 mountain lions. He should be transferred to Chicago."

On Temporary Detail in Washington.--Ira N. Gabrielson, who has recently been appointed regional supervisor in the Northwest region, arrived in Washington, D. C., on January 15, to familiarize himself with the work of the Division in connection with his new duties.

Death of Hunters.--It is with regret that the Bureau reports the following deaths among the personnel of the Division:

Earl B. Sands, died on December 11, as the result of internal injuries sustained in an accident on December 9, when the auto he was driving was struck by a train on a grade crossing. Mr. Sands was one of the first men employed as hunter in the California District, and has served faithfully and efficiently as hunter and trapper. For the past five or six years he filled the position of supervisor of hunters in the Lower Sacramento and San Joaquin Valleys. He had the respect and confidence of his superior officers and of cooperators of the Bureau.

L. H. Anderson, who has been intermittently employed during the past 10 years as trapper in the Texas District, was killed by a gunshot on December 12 in his camp in Grayson County. It is reported that he was killed with his own gun by a man who had been camping with him for a month or more, his assailant, it is understood, having made a confession to that effect. C. R. Landon, leader of predatory-animal control in Texas, states that Hunter Anderson's services in the employ of the Bureau were very satisfactory.



S. R. Anderson, hunter, died on January 10, following an attack of appendicitis. He had been employed as hunter in Arkansas since July, 1918, and had a very creditable record with the Bureau.

William Scalf, hunter in the Washington District, was killed in an automobile accident recently. He was rated as an exceptionally good hunter and trapper.

### LAND ACQUISITION

Inspects Proposed Refuge Sites.--Mr. Dieffenbach left Washington, January 8, to visit the Cape Romain Refuge, S. C., where work on surveys is being conducted by Charles S. Cook, assisted by Kenneth C. Kern and David D. Pugh. From South Carolina he proceeded to points in Texas, Louisiana, Arkansas, and Indiana to obtain information regarding proposed refuge areas. During the latter part of January he visited Savanna, Ill., to assist in a condemnation case covering lands within the Upper Mississippi River Refuge. He plans to return to Washington early in February.

Institutes Proceedings for Purchase of Lands for Refuge.--On January 12, A. A. Riemer left Washington for Raleigh, N. C., to institute the grant record search and compilation of the grant map for the Swanquarter Migratory Bird Refuge, the acquisition of which was approved by the Migratory Bird Conservation Commission on December 18. Mr. Riemer was accompanied by A. J. Rissman, who assisted in this work and continued it after Mr. Riemer's return to Washington.

Progress of Field Parties.--The field party under the direction of Carey H. Bennett is examining proposed refuge units in California, that under George D. Chittick is conducting similar work in Arkansas, while Rudolph O. Gustafson's party has just completed the examination of an area in South Carolina and will begin work on lands adjoining Savannah River Refuge.

### GAME AND BIRD CONSERVATION

Senate Committee Reports on Wild-Life Conservation. -- The special committee of the Senate on Wild-Life Resources, of which Senator Frederic C. Walcott, of Connecticut, is chairman, and Senator Harry B. Hawes, of Missouri is vice-chairman, submitted its first report to the Senate on January 21. The other members of the committee are Senators Pittman of Nevada, McNary of Oregon, and Norbeck of South Dakota. The scope of the investigation is stated and the discussion covers the causes of decrease in wild life, preservation as an economic problem, the national agencies concerned and their responsibilities, the various classes of game, the recreational values of wild life, and the relation to game held by the State in general and by the farmer. Constructive recommendations are made for the future, including recognition of the need for coordination and cooperation between State and national enforcement agencies. The function of the Biological Survey is defined and its vital and peculiar nature stressed. It is pointed out that from this Bureau and the Bureau of Fisheries "must come the information, both scientific and practical, to enable administrative executive agencies to use methods for increasing the production of wild life which are economical and practical." It is also stated that "other Federal agencies should be required to consult and cooperate with this central agency in the discharge of functions having to do with wild life." Copies of the report, it is understood, will be available shortly for distribution to field offices of the Bureau.

Attends Waltonian Convention.--Talbot Denmead, assistant United States game conservation officer, on January 9 attended the first annual convention of the Maryland-District of Columbia Council of the Izaak Walton League of America at Baltimore, Md., and led a discussion on the subject of "Migratory Waterfowl."

Confers with Washington Officials.--United States Game Protector O. D. Steele, of Cambridge, Md., was in the Washington office for a conference with division officials on December 15 and 16.

On Temporary Detail in Maryland.--John Q. Holmes, United States game protector with headquarters at Omaha, Nebr., has been assigned to patrol work with the motor boat Killdeer on the Susquehanna Flats in Maryland for about six weeks.

Game Protector Ill.--United States Game Protector S. W. Linebaugh, of Russellville, Ky., has been very ill and unable to perform official duty.

Sympathy is extended to Mr. and Mrs. Frank G. Grimes in the death of Mrs. Grimes's father, Edgar C. Graham, which occurred at Washington on January 21, at the age of 86.

Alaska Game Commissioner Visits Washington Office.--H. W. Terhune, executive officer of the Alaska Game Commission and chief representative of the Bureau in Alaska, is visiting the Washington office to confer with officials regarding matters pertaining to game-law enforcement in Alaska and the administration of bird refuges under the jurisdiction of the Biological Survey in Alaska.

Birds Observed on Stikine Flats.--A report has been received from Game Warden Frank Dufresne, of Juneau, Alaska, showing that every fall great numbers of lesser snow geese are reported from the Stikine Flats at the mouth of the Stikine River in southeastern Alaska. Latest reports say that the geese were present in unusual abundance this fall.

Birds at Dungeness Spit Refuge.--Warden Wm. E. Hubbard reports that the birds at the Dungeness Spit Bird Refuge, Wash., appear to be in fine condition this winter and that thousands of them are there, including brant, teals, baldpates, mallards, pintails, spoonbills, buffleheads, goldeneyes, coots, and snipe.

Loss of Birds at Brevard Island.--Early in November several thousand young brown pelicans were hatching on the Brevard Island Bird Reservation, Fla., when a severe storm caused high water to sweep over part of the island, and many of the young birds were killed. Again during the week of December 18 heavy winds caused a flooding of the island, with the exception of a small portion of high ground, and killed from 300 to 500 young pelicans and destroyed nearly all the nests and eggs. At the end of December some of the old birds were rebuilding their nests, and several hundred of the fully grown young birds survived. Several thousand birds had left the island before the windstorm. Protector Eli Taylor reported that a number of young birds were dying of starvation, as the weather had been too rough for the older birds to obtain proper food for them. The weather has been unusually cold this winter in that section of Florida, with occasional frosts, so that under such conditions it is hard for the young birds to survive. Two white pelicans were on the refuge in November but were not nesting.



Importations.--Large shipments of birds for the Christmas trade continued steadily during December, the total number imported being in excess of 77,000, which is about 8,000 more than the total for November. In one day alone, December 20, permits were issued for importations of more than 28,000 birds and 35 mammals. These shipments came from England, Germany, Sweden, China, Cuba, and Canada. Among the rarer birds were 30 Reeves's pheasants from Ontario, an unusually large number of these magnificent birds to arrive at one time.

Somali Ostrich Dies.--Dr. T. S. Palmer states that the death at the National Zoological Park on December 4, 1930, of the Somali ostrich (*Struthio camelus molybdophanes*), which arrived November 24, 1904, under Permit 1199, recalls vividly some of the changes that have occurred since the regulation of importation of foreign birds has been in effect. This ostrich, a gift to President Roosevelt by King Menelik, of Abyssinia, was the first of its kind to be brought to the United States, and at the time of its death was probably one of the oldest birds imported under permits issued by the Biological Survey. During its residence in the park, over more than a quarter of a century, it practically lost its sight but never its ability to find its way about the inclosure or its attraction for visitors. This pioneer of avian immigrants from Abyssinia outlived both the King and the President who were responsible for its coming, and it lived to see its native home opened up until a number of other attractive birds from that region are annually brought to this country. It survived a change not only in its own name, originally a full species to a subspecies, but in that of its native land, from Abyssinia to Ethiopia.

How Guatemala Protects its National Bird.--Among the foreign laws and regulations furnished by the Bureau to the Customs Service for consideration in connection with section 527 of the new tariff act, prohibiting entry of mammals and birds that are the subject of protection in their native countries, was a decree of Guatemala protecting the quetzal. This magnificent species, the largest of the trogons, is the national emblem of Guatemala. It was formerly worshipped by the Aztecs and Mayas as Quetzalcoatl, God of the Air. It now appears on the coat of arms and on some of the postage stamps of Guatemala, and the standard unit of coinage, equal to \$1, is also known as the quetzal. According to an executive decree of December 13, 1895, hunting the quetzal "threatens to completely destroy the species, which would be extremely unfortunate, not only because of the peculiar beauty of the said bird but also because it symbolizes the freedom of the fatherland." A subsequent decree prohibits hunting with firearms, traps, or other means, or export of the birds, alive or dead, under penalty of fine or imprisonment and confiscation of the birds. Treasury Decision 44438 now instructs United States collectors of customs as follows: "You will not permit entry of quetzal birds from Guatemala and will seize the same whenever they shall be imported hereafter unless the importation is in compliance with the provisions of Section 527 of the Tariff Act of 1930."

Addresses Sportsmen on Conservation Work.--Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, addressed the convention of the League of Ohio Sportsmen at Columbus, Ohio, on January 22, on "The Government's Conservation Work," and on the same day spoke before the Ohio Game Protectors' Association, which was also in convention at Columbus. Following these meetings Superintendent Steele came to Washington for conferences with officials of the Bureau, and on his return trip to Winona he stopped at Chicago on business of the Survey.

Appointment.--Everett L. Lorenz, of Weaver, Minn., was appointed deputy reservation ranger and United States deputy game warden on the Upper Mississippi River Wild Life and Fish Refuge, effective December 15, 1930.



Wild-fowl Feeding Stations Prove Successful.--Since late last fall Ranger John L. Lundberg has established and maintained a number of bird shelters and feeding stations at various points in Buffalo County, Wis., in the Upper Mississippi Refuge area, opposite Wabasha, Minn. The feed consists of shocks of corn and some shelled grain. Mr. Lundberg reports that the stations so far have been visited for the most part by numbers of pheasants and prairie chickens.

Game-Law Violations.--Ranger Lundberg, assisted by Deputy Ranger Berni, recently apprehended two residents of Winona, Minn., who were hunting in Wisconsin without requisite licenses. After arraignment in State court, the violators were fined \$50 each. The same rangers also apprehended a resident of Wabasha County, Minn., for taking and selling game fish during the close season. A \$25 fine was imposed in this case. On January 5 Rangers Hall and Lundberg arrested a resident of Genoa, Wis., for trapping in refuge areas in Minnesota without a license. Upon arraignment in State court the defendant pleaded guilty, and in default of payment was sentenced to 30 days at hard labor on the Houston County rock pile.

Cox Safely Weathers Brazilian Revolution.--Wm. T. Cox, formerly superintendent of the Upper Mississippi Refuge, now chief forester of Brazil, in a letter to a member of the staff of the Winona office states that he and his family, although suffering considerable worry and inconvenience, safely survived the recent revolution in Brazil. His many friends in the Survey will be interested in the following extract from his letter:

"I haven't done much hunting recently but I did manage to get into a place where there was plenty of shooting--in fact too much of it. That was when I was in Pernambuco during the blow-up. I can now realize more fully how uncomfortable a jack rabbit feels when bullets are whistling around him. Oh, it was the real thing up there! At Bahia things were fairly lively too, and later on here in Rio there was enough to hold one's interest. But we were very fortunate indeed and suffered only a little inconvenience and a lot of worry. You see I couldn't get word to the folks and of course was unable to learn how they were. That meant that we were under quite a strain for a time since there were all kinds of rumors being circulated. For instance, I heard on the ship, before I reached Rio that Copacabana (the suburb where we live) had been bombarded for days and blown to pieces. As a matter of fact, there had been no shelling from the fleet or the forts here previous to my return. When things did break here it was amusing to see how coolly Myrtle and the children took it. Guess they were expecting something much worse so that the doings seemed mild. And, of course, the fighting in Rio wasn't so very bad."

Mr. Cox added that the new government in Brazil seems to take a favorable attitude toward the work that he has undertaken.

Reservation Cases Disposed of.--One case involving the hunting of wild ducks on Big Lake Bird Reservation, Ark., evidence in connection with which was furnished by Protector George M. Riddick and Deputy Reservation Protector R. G. Hillhouse, was recently disposed of in Federal court by a fine of \$5. A violator arraigned in Federal court at Boise, Idaho, on December 24, 1930, charged with hunting on Deer Flat Refuge, was required to pay a fine of \$15. The evidence was obtained by Reservation Protector Towle.

Treaty-Act Cases Terminated--Reports Received during December

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier	1	Missouri	Killing ducks from a motor boat	\$10
Barmeier, Creech	3	"	Illegal interstate transportation of ducks	\$25 each
Charlton, Bowersox*	1	Ohio	Possessing a sandhill crane	\$100
Davis**, McGallagher**, Hoffman, Oberhaus*	2	Alabama	Killing ducks from a motor boat	\$25 each
Hoffman, Oberhaus*	2	"	Killing ducks from a motor boat	\$10 each
Shaver	1	Minnesota	Possessing ducks in storage in close season	\$10
Shaver, Vogel*	1	"	Hunting ducks after sunset and selling ducks	\$25
Tonkin, Salisbury*	2	California	Exceeding daily bag limit on geese	\$10 each
Tonkin, Wickham**	1	"	Exceeding possession limit on ducks	\$10

Treaty Act Cases Reported during December

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Charlton, Bowersox*	1	Ohio	Possessing a sandhill crane
Davis**, McGallagher**, Hoffman, Oberhaus*	2	Alabama	Killing ducks from a motor boat
Harder*, Westine*	1	Illinois	Killing a duck from a motor boat
Hoffman, Oberhaus*	2	Alabama	Killing ducks from a motor boat
Perry, Concannon*	1	Kansas	Hunting and killing ducks after sunset
Thomason*	2	Arkansas	Possessing ducks in close season
Tonkin, London*, Miner*	2	California	Exceeding daily bag and possession limits on ducks
Tonkin, Salisbury*	2	"	Exceeding daily bag limit on geese
Tonkin, Wickham**	1	"	Exceeding possession limit on ducks
Whitehead	2	Georgia	Hunting and killing wood ducks
Whitehead, Carter*	1	"	Killing and possessing a duck in close season
" "	2	"	Killing and possessing wood ducks

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\* U. S. deputy game warden.

\*\* Deputy State game warden.

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# THE SURVEY

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CREDIT FOR MATTER REPRINTED FROM THESE PAGES SHOULD BE GIVEN TO THE BIOLOGICAL

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## GENERAL NOTES

Extension Workers Hear of Wild-Life Problems.--Recent developments in the propagation and hunting of game on farms were explained by Mr. Redington to members of the weekly Extension Conference of the Department on February 4 at one of a series of meetings of extension workers that are being addressed by bureau chiefs. Mr. Redington spoke on the economic status of predatory animals and on the economic and recreational values of game, particularly of the relation of farm lands to game production and of the profits that may accrue to the landowner therefrom, and presented the salient features of the American game program recently adopted by the American Game Conference.

The mutually beneficial relations that may exist between the farmer and the sportsman were demonstrated, he said, in the so-called "Williamston Game Plan" in Michigan, under which farm shooting privileges are pooled, conditions made more favorable for game, and trespass controlled through group action of the farmers. A feature of the Williamston plan, which is being assisted by the State University, the Agricultural College, and the Biological Survey, is that each farmer-member is issued four tickets granting hunting privileges, which he may keep, give away, or sell as he pleases, but he is obligated to see that no ticket falls into the hands of an irresponsible person; tickets obtained from any farmer in the group are honored on the farms of all other members, and the visiting sportsman is required to report his kill for the day to the farmer who issued his ticket. The program is sponsored by National, State, and local chapters of the Izaak Walton League of America, which is carrying out a program of food and cover improvement throughout Williamston Township, paying the individual farmer in cash for the food and cover agreed upon for his individual farm. A system of refuges to conserve the seed stock of game birds also is being established within the township.

Mr. Redington also discussed the wild-life administrative program of the Biological Survey, stressing the need for fact-finding research. He mentioned the Survey's program of migratory-bird protection and of establishment of refuges for migratory game on suitable breeding, resting, and feeding grounds, and urged caution in further private drainage enterprises, pointing out the very high value of suitable marsh areas to wild life. So far as possible, he said, representative examples of the country's native fauna and flora should be preserved as they were first found by white men.

Discuss Effects of Proposed Channel on Upper Mississippi Refuge.--Mr. Henderson and Francis M. Uhler, of the Division of Food Habits Research, on February 26, with officials of the Upper Mississippi River Wild Life and Fish Refuge, represented the Biological Survey at a meeting of army engineers at Winona, Minn., and discussed at a public hearing the possible effects on the refuge of the proposed construction of dams to establish a 9-foot channel in the Mississippi River in parts of the refuge.

Bureau Authorized to Aid in Relief of Unemployed.--The first deficiency act, approved February 6, 1931, carried an item of \$300,000 for the Biological Survey for emergency construction work and other items to assist in relieving the unemployment situation. There was



allotted \$55,575 to the Division of Game and Bird Conservation for buildings and improvements at the five big-game preserves and at two bird refuges; \$34,180 to the Division of Land Acquisition for surveying three of the big-game preserves and eighteen bird refuges; \$202,645 to the Division of Predatory-Animal and Rodent Control for necessary supplies and the employment of hunters and laborers in campaigns for the control of rodents and predatory animals; and \$7,600 to the Division of Fur Resources for improvements at the U. S. Fur-Animal Experiment Station at Saratoga Springs, N. Y., and at the Rabbit Experiment Station at Fontana, Calif.

The number to be employed on construction work of buildings at wild-life reservations and of water systems, fences, and dams will average approximately 140 over a period of two months. In the acquisition of refuge lands 9 civil engineers will be employed between the 1st and the 10th of March, and each will have survey crews consisting chiefly of chainmen, rodmen, and axmen. The engineers will be obtained on the recommendation of an engineering society that maintains an employment bureau, and the laborers in their crews will be picked up locally in the communities where the work is to be done. At the fur-animal and rabbit experiment stations 8 men will be employed on the construction of rabbit hutches, septic tanks, cold-storage plants, and tool sheds, and in cutting trees and clearing woods for additional fur-animal pens. In the control of predatory animals and injurious rodents approximately 180 laborers will be employed by the first part of March, and a like number in addition before the first of April. These men will be taken on in localities where control operations are being undertaken, many of them to be former employees of cooperating organizations that have been laid off for lack of funds, and in this way the service will benefit by the re-employment of experienced men. An attempt is being made so far as possible to employ men who have families dependent upon them.

Survey Exhibits at Sportsmen's Shows.--An exhibit on phases of the work of the Biological Survey was displayed at the New England Sportsmen's Show held at the Mechanics Building, Boston, Mass., February 7 to 14. This consisted of a tank containing a flock of live wild ducks, a case of mounted ducks showing the males and females of various species, and a room fitted up as a hunting lodge, with various trophies of the hunt, including heads and skins of big-game animals. Lisle Morrison, in charge of the exhibits of the Bureau, supervised the exhibit at Boston and reports that large crowds were attracted to the booths and that much interest was manifest in this phase of the work of the Bureau. The same exhibit was shown during the week of February 21 to 28, under Mr. Morrison's direction, at the Sportsmen's and Motor Boat Show at the Commercial Museum in Philadelphia.

Visitor Gives Interesting Account of Alaskan Observations.--Charles D. Brower, of Barrow, Alaska, was a recent visitor at offices of the Bureau. In addition to engaging in the mercantile business in the Territory since 1885, Mr. Brower has become familiar with natural-history conditions in this northernmost region of Alaska and for many years has collected birds and their eggs for a number of institutions and private collectors and has furnished valuable information to many American naturalists. During his visit at the Biological Survey, he gave the Bureau notes on the occurrence and habits of many species of birds and mammals in the Point Barrow region, based on his long experience. Commenting on the musk-ox, he said that the last herd in the region was exterminated about 100 years ago, and stated that in 1885 he talked with an old Eskimo who said that his father helped kill the last herd of musk-oxen, containing 11 animals, southward of Point Barrow.

Other Visitors.--D. L. Flanders, former game commissioner of Vermont, was a visitor at offices of the Survey on February 19.

Miss Roberta M. Taylor, formerly clerk-typist and photograph file clerk, renewed acquaintances in the Bureau's offices on February 21. Since leaving the Survey, about three years ago, Miss Taylor has spent two years in Honolulu, Hawaii, and has entered the field of commercial art. Her home is in Winchester, Va.

Biological Survey Party.--About 190 members of the Bureau and their friends and families were present at the Biological Survey party--the second of its kind--held at the Washington Club, 17th and K Streets, NW., on Monday evening, February 16. The entire second floor of the Club was reserved for the occasion, and the rooms were attractively decorated with flowers, palms, and other ornamental plants furnished by the Office of Gardens and Grounds of the Bureau of Plant Industry. In the center of a bank of palms in the ballroom was a large electrically illuminated photo-portrait in colors of several musk-oxen, typifying one of the chief accomplishments of the Biological Survey during the past year--that of re-establishing these big-game animals in Alaska. Most of the guests spent the evening in dancing, card playing, and visiting, though some enjoyed also checkers, quoits, skill ball, and golf-putting contests. Music was furnished by the L'Aiglon Orchestra. Mrs. Paul G. Redington, Mrs. Frederick C. Lincoln, and Mrs. James Silver presided at the refreshment table.

Among the guests from other offices of the Department were the Director of Scientific Work and Mrs. A. F. Woods, the Director of Extension Work and Mrs. C. W. Warburton, the Director of Personnel and Business Administration and Mrs. W. W. Stockberger, the Director of Information Milton S. Eisenhower, the Solicitor and Mrs. E. L. Marshall, Mr. and Mrs. E. E. Hall from the Secretary's Office, Mr. and Mrs. John P. Wenchel from the Solicitor's Office, Mr. and Mrs. C. E. Rachford from the Forest Service, and Mr. and Mrs. J. Wise Byrnes from the Bureau of Plant Industry.

There were also present the following friends or former members of the staff of the Survey: The president of the Carnegie Institution of Washington and Mrs. John C. Merriam, the assistant secretary of the Smithsonian Institution and Mrs. Alexander Wetmore, the director of the National Zoological Park and Mrs. William M. Mann, the assistant director of the National Zoological Park and Mrs. Ernest P. Walker, Mrs. Robert Y. Stuart, Mrs. Ada B. Morrison, Dr. George W. Field, Mr. and Mrs. M. W. Talbot, Mr. and Mrs. Herbert S. Ward, Louis Klein, and Mrs. A. L. Peeples.

The committee on arrangements consisted of James Silver, chairman, representing the Division of Predatory-Animal and Rodent Control; Miss Alice W. Hall, Administrative Offices; Frederick C. Lincoln, Biological Investigations; C. C. Sperry, Food Habits Research; Miss Elsie Galloway, Fur Resources; W. R. Dillon, Game and Bird Conservation; and Mrs. May R. Jeffries, Land Acquisition.

Bureau Personnel Contributes to Community Chest.--A most creditable response was made by the office forces of the Biological Survey to the recent appeal for funds for the Washington Community Chest. The total of \$1,173 subscribed was 207+ per cent of the Survey's quota, and indicates the sympathetic feeling for the movement and the commendable spirit of generosity on the part of the employees. Much of the credit for the success in the Bureau was due to the interest and untiring efforts of Mrs. Burnetta E. Muth, of the Division of Game and Bird Conservation, who served as section chief and keyman for the Survey and obtained pledges from 85 per cent of the Bureau personnel in Washington.

Official Publications.--The following official publications of the Bureau were issued in February:



- "Habits and Economic Status of the Pocket Gophers," by Theo. H. Scheffer. Technical Bulletin 224-T, 27 p., illus. Received February 11.
- "State Bird and Mammal Reservations," compiled in the Division of Game and Bird Conservation. Leaflet Bi-652 (revised), 62 p. (mimeographed). Received February 17.
- "Report to the Governor of Alaska on Cooperative Predatory-Animal Investigations and Control in the Territory, for the Period March 1, 1929, to February 28, 1931," by H. H. Gubser. 20 p. (mimeographed), illus. Dated March 1.

List of Workers Revised.--The list of the personnel of the Biological Survey (Bi-945) has been revised to March 1, 1931, and is now in process of being multigraphed. A copy will be sent to each field office, and additional copies may be had as needed on request.

### BIOLOGICAL INVESTIGATIONS

Study Wild Life Conditions on Eastern Coast.--During the latter part of January, Thomas D. Burleigh, associate biologist stationed at Raleigh, N. C., accompanied by W. J. Jackson, temporary field assistant, made a brief survey of wild-life conditions at various points on the coast of North Carolina, South Carolina, and Georgia. Three days were spent at Oregon Inlet, on the outer coast below Albemarle Sound, and then a brief stop was made at Beaufort (old Fort Macon), where a number of interesting birds were observed on their wintering grounds. On January 22, Mr. Burleigh attended the meeting of the Commercial Forestry Congress, at Columbia, S. C. He then joined Mr. Redington on a trip to Sapelo Island and later proceeded to Blackbeard Island, where he was able to obtain a considerable number of specimens of birds and numerous notes on occurrence and life history.

Bands Waterfowl.--Oliver L. Austin, Jr., who has returned to duty after being on leave for several months and who has been assigned to bird-banding work, is at present banding various species of ducks on the Potomac River near the mouth of Broad Creek, Md., in an attempt to learn where the birds wintering on the Potomac go after the spring exodus, and what their relations are to the flocks that winter about other noted resorts, such as the Susquehanna Flats, Chesapeake Bay, Back Bay, and Currituck Sound.

Investigates Snow Goose Conditions.--Dr. H. C. Oberholser spent several days in mid-February investigating the condition of snow geese in the region of Back Bay and Currituck Sound. Owing to the sudden illness of U. S. Game Protector W. L. Birsch, in whose boat the party was traveling, this method of conveyance was necessarily abandoned, but Doctor Oberholser was able to finish the investigation by resorting to other means.

Speaks at Stockmen Meeting.--S. B. Locke, associate biologist stationed at the Intermountain Forest and Range Experiment Station at Ogden, Utah, presented a paper on "Wild Life Management" at the meeting of the American National Livestock Association at Seattle, Wash., January 28-29.

Consulting Bureau's Bird Records.--Dr. John W. Scott, head of the Department of Zoology of the University of Wyoming, at Laramie, while temporarily residing in Washington, is consulting the bird records of the Survey in connection with a report on the birds of Wyoming, which he is preparing in collaboration with Dr. Otto McCreary, also a research worker in the University of Wyoming.

"Epervier"--Sparrow Hawk or Fish Net?--In the January number of THE SURVEY (page 4) mention was made of the recovery of a banded common tern on the island of Guadeloupe, Lesser Antilles, the capture of which was credited to an "epervier," translated as "sparrow hawk." A letter recently received from Prof. Robert Poncy, of Geneva, Switzerland, reveals the fact that while "epervier" is French for sparrow hawk, a secondary use of the word is for a certain type of fish net. It seems, therefore, that instead of the bird being captured by a trained falcon, as was previously reported, it was caught in a fish net.

#### FOOD HABITS RESEARCH

Farmers' Bulletin on Bird Refuges Revised.--Farmers' Bulletin 1239, "Community Bird Refuges," by Mr. McAtee, has recently been revised and will shortly appear as Farmers' Bulletin 1644 under the title "Local Bird Refuges." Since 1921, when this bulletin was first issued, 140,000 copies have been printed, making the average distribution 14,000 copies a year.

Appointment.--Arnold L. Nelson, of Michigan, has been appointed junior biologist, effective February 16, and assigned to work on the food habits of predatory birds. Mr. Nelson is a graduate of the University of Michigan.

#### FUR RESOURCES

Gives Addresses on Fur Resources.--Mr. Ashbrook, on January 24, gave a talk on "Fur Resources of the United States" at the New England Game Conference held in Boston, Mass., supplementing his address with the motion picture "The Fur Industry of the United States." He spoke on the same subject at a luncheon given by the Civitan Club at the Lafayette Hotel in Washington, D. C., on January 27, and at a meeting of fur-trade officials in New York City on February 9. There was a good attendance at all these meetings, and the picture was received with interest. On February 10, Mr. Ashbrook addressed about 400 students of the Central Needle Trades School of New York on the work of the Division and also showed the motion picture. About 200 of these students are enrolled in the fur department of the school. They followed the lecture with keenest interest, asking many questions at its conclusion.

Talks on Furs.--By arrangement of the county home demonstration agent, Dr. J. E. Shillinger recently addressed the Cambridge (Md.) Women's Club on the subject of "Furs." There was a large attendance, and the specimens of furs exhibited aroused much interest. Opportunity was given those present to compare the quality and texture of furs from various species of animals.

Returns to California.--After a four-weeks' stay in Washington, John W. Meyer, in charge of the Rabbit Experiment Station, returned to Fontana, Calif., on January 21. While in the East he visited a number of rabbit farms and rabbit slaughterhouses in New York, Pennsylvania, Maryland, and the District of Columbia. En route to the West he inspected other rabbitries near Weaverton, Ill., Minneapolis, Minn., and Denver, Colo.

Field Laboratory Established.--The establishment of the field laboratory at Church Creek, Md., for use in conducting investigations on muskrats and other fur animals, has been completed. Other operations, such as constructing pens and nest boxes and acquiring live animals for breeding, are under way to aid in the experimental work being conducted by Agent Frank Smith.

Temporarily Detailed to University of Minnesota.--Since Dr. Karl B. Hanson arrived at the University of Minnesota, at Minneapolis, on February 2, he has been working on microscopic



pathology and examining slides prepared from specimens that were sent by him from the Fur Animal Experiment Station at Saratoga Springs, N. Y. Doctor Hanson writes that he is enjoying his assignment, and highly commends the work of Dr. R. G. Green and his assistants and their progress in the investigations of diseases of fur animals and other wild life. Doctor Hanson expects to return to Saratoga Springs about the last of March.

Motion Picture Films Sent to Canada.--Requests have been received for copies of the motion pictures "How to Handle Foxes" and "Fox Encephalitis" from Summerside, Prince Edward Island, Canada, for showing at a meeting of fur-animal breeders. "The Fur Industry of the United States" was sent to Winnipeg, Manitoba, on February 12 for showing at a similar meeting.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Cougar Hunt Shown in New Film.--"The Cougar Hunt" is the title of a one-reel motion picture just completed and released by the Department's Office of Motion Pictures, and described by that office as one of the most spectacular educational films ever made by the Department. It shows methods followed by Biological Survey hunters in predatory-animal control work, with special reference to the mountain lion, or cougar, and closes with a thrilling lion hunt. Opening scenes show the predators in action--a coyote breakfasting on chicken; a wolf enjoying a lamb supper; a cougar watching its prey. Dismayed at his losses of sheep, a rancher seeks Government aid, and the local Biological Survey control leader takes charge and opens the campaign. The leader, his crew, and the "lion dogs" start for the cougar country. The dogs find a hot trail and the hunt is on. There are flashes of dogs, followed by horses and hunters making their perilous way over rocky country where no trail is apparent; flashes of the cougar seeking to elude its pursuers; then of galloping horsemen again, and finally of the big game treed. The picture was filmed in south-central Utah, the hunt taking place in Salina Canyon, on the rim of the Great Basin. Mr. Young was responsible for the subject matter, with George E. Holman, leader of predatory-animal control in Utah, as his field representative. The picture was directed by Raymond Evans, chief of the Office of Motion Pictures, with Eugene Tucker at the camera.

Heavy Predatory Animal Infestation on 250 Miles in New Mexico.--John C. Gatlin, leader of predatory-animal and rodent control in New Mexico, reports that on a range near Alma, N. Mex., on which there had been little hunting for two years, 15 mountain lions and 1 wolf have been taken in the last 30 days, 7 of the lions by Bureau hunters and the remainder by private hunters. These were removed from a small range, 25 miles long by 10 miles wide, and the rancher says "there is still enough seed left for next year. We have plenty of coyotes any time you can send us a hunter, and will be glad to help him locate the remaining lions and two wolves that we know are on the range at the present time."

Bubonic Plague among Ground Squirrels.--In the November, 1930, issue of the Military Surgeon, the official publication of the Association of Military Surgeons of the United States, is an interesting article on ground-squirrel control in the vicinity of military posts in California in connection with anti-plague work. This discusses at considerable length the bubonic-plague infection among ground squirrels in California and the manner of eliminating the animals from military posts. Mention is made of the methods used by the Biological Survey in handling strychnine, thallium, and carbon disulphide.

Mother Mountain Lion Deserts Young.--Hunter Ed. Steele, of the New Mexico District, reports an unusual recent experience during a mountain-lion chase. He had located a female lion and her two kittens under a rock ledge. One of the dogs rushed in and killed a kitten, and the mother, instead of attempting to defend her young, merely trotted up the mountain-side. She was killed, however, by Hunter Steele.

Predatory-Animal Control an Aid to Stock Raising.--Trapping for predatory animals was particularly effective in partial control in some areas in Texas during the calendar year 1930. Of animals taken, about a third were trapped during November and December. One trapper, J. E. Hearn, in four months' time contributed more than 100 coyotes a month to the total. His work was done in La Salle County, on what was known 50 years ago as the biggest sheep ranch in Texas. During recent years cattle have been raised on it exclusively, but the owners plan to re-enter the sheep business. Before this can be done, however, a known heavy infestation of coyotes must be brought under control. In his four-months' work in this county Mr. Hearn has made considerable progress in control operations.

Growth of Work in Eastern District.--In the Eastern District drought and business depression have interfered somewhat with operations, a considerable number of scheduled campaigns being cancelled through lack of local funds. Yet in the face of these conditions, 21,000 pounds of bait were distributed in mouse-control work in New England during the past year. The city of Charleston, S. C., recently appropriated funds for permanent rat-control operations in cooperation with the Biological Survey, somewhat similar to the work now being carried on in Portland, Oreg., and in Tacoma, Wash.

Jack-Rabbit Control in Utah.--Three drives in Box Elder County, Utah, recently carried on by sportsmen, resulted in killing 9,240 jack rabbits, in addition to many accounted for by other methods of control. This infestation of jack rabbits in Utah is one of the few reported from the West this quarter, as the species seem to be present in minimum numbers throughout most of the Western States this year.

Pocket-Gopher Control Progresses in Texas.--During the latter part of December, Dan M. Foster, assistant in rodent-control work in Texas, in cooperation with the secretary of the Jacksonville Chamber of Commerce and the county agricultural agent, conducted a series of field demonstrations in pocket-gopher control in Cherokee County. Two thousand farmers attended these meetings to receive instructions in control by various methods. By the end of December 1,200 acres had been covered in these demonstrations. In Nacogdoches County 23 farm demonstrations were given to an aggregate attendance of 1,000 farmers. Putting into practice the instructions received at these meetings, the farmers of this county have treated about 16,000 acres as a start toward control, and a similar program is being undertaken in Anderson, an adjoining county.

El Paso Employs Rodent-Control Specialist.--The city of El Paso, Tex., has employed a rodent-control specialist, who is to devote his entire time to controlling pocket gophers and rats under the supervision of the Biological Survey. As a precautionary measure in protecting the levees constructed as a part of the city flood-control program, this man has begun trapping pocket gophers. During December, 4 miles of levees and right-of-ways were covered and 375 of the rodents caught.

Pocket Gopher Control Work Is Well under Way in El Paso Valley.--The organized crew operations in pocket-gopher control carried on by the El Paso County Water Improvement District No. 1 and the El Paso County Commissioners' Court under the direction of this Bureau are already well under way for the current winter. R. B. Hickerson, assistant in rodent-control work, has charge of the crews and reports that the work is progressing well. He expects to cover a minimum of 25,000 acres, of which total, 5,345 acres of irrigated farmlands were treated during December, 1930.

Mad Dog Bites Seven in One Family.--On December 25 all seven members of a family in White Pine Valley, Nev., were compelled to go to Elko to take the Pasteur treatment,



after being bitten by their pet dog, which had been in a fight with a rabid coyote and later developed rabies.

Jack Rabbits Bring Low Price in South Dakota.--The price offered for South Dakota jack rabbits or their skins has been too low to warrant extensive hunting by fur gatherers this season. A few local buyers are paying 12 to 15 cents each for unskinned rabbits, the pelts of which are used in the felt and the fur trades; and produce companies shipping dressed poultry pay 15 cents each for jack rabbits suitable for food, these being frozen and shipped unskinned principally to New York City markets.

Porcupines Damage Trees in Washington.--During the second quarter of the fiscal year five townships in the northern part of the Umatilla National Forest, Wash., were covered in porcupine-control work. This area is one of many in Oregon and Washington in which porcupine damage has become a serious problem. The entire region is rough and difficult to traverse, and thus the control work can make but slow progress. Forest Service officials have expressed satisfaction with the work and the hope that it can be extended through the Blue Mountain area, where porcupine damage is increasing.

Prairie-Dog Control Saves Ranchman's Hay.--A ranchman living near Guffey, Colo., reports that the prairie-dog control operations carried on in his territory during the past season resulted in saving more than 50 tons of his hay.

Mountain Lion Taken in Black Hills.--Louis Knowles, leader in the South Dakota District, writes of the first mountain lion killed within the Black Hills during the past 25 years, the facts being reported in a letter from the president of the South Dakota School of Mines. The report states that it had been known from tracks that two mountain lions had been in the region for about two years, and a reward for their capture had been offered by stockmen, who had suffered considerable losses from their depredations. Until December, hunting had gone on without success, and then, with the aid of three coyote hounds, the hunter killed a female lion in the rough country south of the Hardy Ranger Station, very near the Wyoming line. The animal was 6 or 7 years old, measured 6 feet 11 inches from tip to tip, and weighed about 109 pounds. It had had a litter of kittens, and consequently others of the species are probably still at large in that part of the country.

Wolves and Coyotes in British Columbia.--R. M. Stewart, formerly game warden in the lower Fraser country near Chilliwack, British Columbia, states that coyotes are now quite common and generally distributed in the lower Fraser Valley. He also says that there has been a migration of coyotes into northern British Columbia in recent years, and that the animals have now spread as far as Atlin. The Indians, according to Mr. Stewart, at first had no idea what these animals were. Now coyotes have become very numerous and are doing much damage to ptarmigan. Major Allan Brooks, of Okanagan Landing, B. C., reports that the coyote is now known in southern British Columbia right down to salt water at the head of Howe Sound. Whether it has spread northward into southern British Columbia from western Washington is a moot question.

Mr. Stewart also advises that wolves are becoming widespread and are doing considerable damage to moose and other big game. It is reported that during the last trapping season only 5 wolves were seen in the district near Atlin known as Small Valley, but that this year the number there has increased to 15.



Bobcats and Wolves Taken within Wolf Proof Pastures.--C. R. Landon, leader of predatory-animal control in Texas, reports that five hunters working in Val Verde County took 9 bobcats and 30 coyotes within so-called wolf-proof pastures that were heavily stocked with sheep and goats.

Hunter Accidentally Killed.--Hunter Elmer Miller, of the Oregon district, employed intermittently in Curry County, was killed in a hunting accident just before Christmas. His dogs had trailed a bear that did not "tree." It had already killed one dog and was mauling the second when Mr. Miller went to its rescue. A companion fired at the bear but hit Mr. Miller instead. The accident occurred 16 or 17 miles back in the hills, and Mr. Miller died before a doctor could reach him.

Promotions.--Thomas L. English, who has been employed as hunter and foreman, in the New Mexico District since May, 1923, was appointed assistant leader of predatory-animal control, effective February 12, 1931. Justus C. Ward, agent in the Control-Methods Research Laboratory at Denver since November 1, 1928, was appointed associate pharmacologist, effective February 16.

Congratulations.--The marriage has been announced of Leo S. Twitchell, assistant leader of predatory-animal control in the Idaho District, and Miss Leona Margaret Hall, of Pocatello, Idaho, on January 13. Best wishes of members of the Bureau are extended to Mr. and Mrs. Twitchell.

#### LAND ACQUISITION

Detailed to Field.--Doren E. Woodward, who has been in the Washington office since December, left on February 17 for Winona, Minn., to assist in matters pertaining to the acquisition of lands at the Upper Mississippi River Wild Life and Fish Refuge. Daniel H. Janzen, who has been in Washington during the past two months, left on February 20 for Great Bend, Kans., where he will resume work on the Cheyenne Bottoms Migratory Bird Refuge.

Returns to Washington. -Albert J. Rissman has completed the grant record search in connection with the compilation of the grant map for the Swanquarter Migratory Bird Refuge, and returned to Washington from Raleigh, N. C., on February 8.

Surveys Boundary of Big Lake Refuge.--Armand F. Allard is now engaged on a boundary and improvement survey of Big Lake Bird Reservation, Ark. It is estimated that this work will consume approximately one month.

Progress of Field Parties.--The field party under the direction of Carey H. Bennett has completed work in California and is now examining proposed refuge units in Oregon. Rudolph O. Gustafson's party has recently begun similar work in Florida, and George D. Chittick's party in Arkansas.

#### GAME AND BIRD CONSERVATION

Conservation Measure Passes Senate.--A bill (S. 5813), to provide for the consideration of wild-life conservation in connection with the construction of public works or im-

provement projects, was passed by the Senate on February 10 and reported to the House of Representatives on February 21. This measure would require Government agencies to consider the effects of public works or other improvements on the replacement and conservation of wild life. Such agencies, before approving plans for such work, would seek the advice and cooperation of the Bureau of Biological Survey, the Bureau of Fisheries, the Forest Service, and the National Park Service.

Attends Meetings of Izaak Walton League.--Talbot Denmead attended the second annual banquet and meeting of the District of Columbia Chapter of the Izaak Walton League of America, held at the Raleigh Hotel, in Washington, on February 5. He gave a talk on "What Conservation Means," which was broadcast over Station WOL. On February 12 he also gave an address at the second annual banquet of Allegany Chapter of the Izaak Walton League, at Cumberland, Md.

Visits New York City.--W. R. Dillon was in New York City during the latter part of January in the interests of the enforcement of the Migratory Bird Treaty Act.

Personnel Notes.--U. S. Game Protector John Q. Holmes has returned to his headquarters at Omaha, Nebr., after an assignment of about six weeks on the Susquehanna Flats in Maryland.

U. S. Game Protector George Tonkin, with headquarters at Berkeley, Calif., has been suffering considerably from the effects of poison ivy with which he came in contact on January 11.

U. S. Game Protector S. W. Linebaugh, of Russellville, Ky., took up his official duties again on January 20 after his recent illness.

U. S. Game Protector Albert Stadlmeir, of Pleasantville, N. J., conferred with officials in the Washington office on February 14.

Appointment.--Mrs. Grace Thompson was appointed stenographer in the Washington office on January 19, having been transferred from the Office of Information of the Department.

State Game Warden Shot.--The Bureau regrets to learn of the death of State Game Warden and U. S. Deputy Warden Barney T. Lefever, of Gloucester, Ohio, aged 57, from an infection resulting from a gunshot wound received on January 6. The details of the shooting are not known to the Bureau.

Addresses Biological Society.--Hugh W. Terhune, executive officer of the Alaska Game Commission, who has been in the Washington office for several weeks, addressed the Biological Society of Washington on the evening of February 7 on the subject of "Wild Life Protection in Alaska."

Buffalo and Elk Transferred.--A male buffalo from Sullys Hill Game Preserve, N. Dak., and a female from the Wind Cave Game Preserve, S. Dak., have recently been transferred to the zoo at Watertown, N. Y. The former was a present from the Department, and funds for the purchase and transfer of the latter were raised through the efforts of the boy and girl scouts of Watertown and a local lodge. Eight elk (5 females and 3 males) were shipped by truck on January 9 from Sullys Hill Game Preserve to the new State Game Preserve near Scotts Bluff, Nebr., for stocking that area. These animals were furnished by the Bureau under a cooperative arrangement. All the animals arrived in good condition and were released without mishap.

Elk at Elk Refuge in Good Condition.--Protector A. P. Nelson, of the Elk Refuge, Wyo., reports that the weather continued mild during January, at the refuge, and that only about four inches of snow fell, part of which melted late in the month. Most of the Jackson Hole elk are in good condition. and Mr. Nelson stated on February 1 that unless more snow should fall it would not be necessary to feed them for some time. Most of the animals were scattered throughout the mountainous region of Jackson Valley, a number remaining back on the Teton State Game Preserve.

Birds at Big Lake.--On February 1 Protector Steven B. Crossley estimated that there were at least 12,000 ducks on the Big Lake Bird Reservation, Ark., as well as a number of killdeer and other birds. The level of the water that had entered the reservation was falling, but there was still a good-sized area of feeding grounds for the ducks. Mr. Crossley stated that spring-like weather prevailed and he believed that the spring flight of ducks had started.

Talks on Birds to School Children.--Protector George M. Benson, of Lake Malheur Reservation, Oreg., reports that the pupils in the sixth grade of the public school at Crane, Oreg., have organized an Audubon Society. On January 9 he spoke to them concerning the birds on the refuge, the banding operations conducted there, and the results obtained by that method of research. He offered a prize to the boy or girl who should make the best bird house this spring.

Congratulations are extended to Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, and Mrs. Steele, on the birth of a daughter, Jean Charlotte, on February 7, at Winona, Minn. An original and interesting card announcing the event was received by many of Superintendent Steele's friends in Washington.

Observes Otter Tracks.--Reservation Ranger H. C. Lawrence, of the Upper Mississippi Refuge, reported that on January 16 he saw the fresh tracks of a large otter in the Winnesheik Bottoms about 3 miles southwest of Ferryville, Wis., the first otter tracks he has seen there in about four years.

Waters of Trempealeau Marsh Held not Navigable.--The Wisconsin Supreme Court in a recent decision has ended a two-year controversy between sportsmen of western Wisconsin and the fur-farm corporation owning the Trempealeau marsh. This area is in the Mississippi Bottoms and is subject to acquisition for the Upper Mississippi Refuge. In 1929 the fur-farm company inclosed the area and warned the public against trespassing. Hunters who had frequented these marshes for the past 50 years contested the action, and, on the day the hunting season opened, invaded the area in a body. The company then applied to the local court for a permanent injunction restraining the hunters from trespassing on this property or on any of its waters. This was refused on the ground that the waters are navigable and therefore under a long line of Wisconsin decisions open to public use for hunting and fishing. The case was appealed by the fur-farm company. In reversing the decision of the lower court, the Supreme Court of Wisconsin held that the only question for decision was whether these waters were public navigable waters and that this question had been determined in 1911, when in the matter of the organization of the Trempealeau County Drainage District the lower court had been sustained in its finding that these waters were in fact non-navigable. Another action, instituted by the same group of sportsmen, but brought by the attorney



general of Wisconsin in the name of the State, against the fur-farm company seeking to have its license revoked, on the ground that operations thereunder constitute a public nuisance, was decided adversely to the State in the lower court some time ago.

Appointed Cooperative State Forest Ranger.--Howard A. Miller, forester for the Upper Mississippi Refuge, has received an appointment from the State Forest Service of Minnesota to the position of special cooperative ranger. It is anticipated that this appointment will result in mutual benefit to the refuge and the State in the detection and suppression of fires in the refuge area.

Nine Upper Mississippi Cases Terminated in Federal Court.--In Federal court held at Winona, Minn., on January 28 and 29, six cases involving violations of the Upper Mississippi Refuge Act and regulations were disposed of. Fines of \$100 and \$75 were imposed for illegal trapping on Lake Winona and Half Moon Lake, respectively, and one of \$10 was imposed for carrying firearms on a closed area of the refuge within Houston County, Minn. Three cases involving the carrying of firearms on a closed area were dismissed on motion of the United States attorney, in one of which the defendant was reported as being so seriously ill that to compel his attendance in court might have resulted fatally. In three of the cases, evidence was obtained by Ranger Hall, and in the other three by former Patrolman William Oldenburg. In Federal court at Madison, Wis., on January 28, three cases involving the carrying of firearms on closed areas of the refuge within Crawford County, Wis., were terminated with pleas of guilty and fines amounting to \$10 each. On evidence obtained by Ranger Hall, two residents of Wabasha County, Minn., entered pleas of guilty in Federal court at Winona on January 29 to the charge of hunting wood ducks, and fines of \$10 and \$5 were imposed.

Sentenced for Destroying Muskrat Houses.--For destroying muskrat houses and possessing muskrats illegally, a resident of La Crosse, Wis., entered a plea of guilty in State court recently and was sentenced to the county jail for 60 days. The sentence was suspended, however, and the defendant paroled in the custody of the probation officer. Evidence in this case was obtained by Deputy Ranger Winslow.

Arrested for Trapping for Mink on Refuge.--On January 10, Ranger Lawrence apprehended a resident of Prairie du Chien, Wis., who was violating the Upper Mississippi Refuge Act and regulations by trapping for mink in a refuge area in Crawford County, Wis.

Unlucky Number?--Thirteen recently proved to be an unlucky number for a game-law violator in Missouri. It was reported that at 9:13 a.m. on February 7, a man was apprehended for selling "jack salmon" in violation of the State law. In addition, 13 wild ducks were found in his automobile, and 13 spectators witnessed them. In exactly 13 minutes from that time the defendant was arrested and fined in State court for the unlawful sale of the fish. He was then taken before a United States commissioner on the charge of possessing wild ducks in close season, and the hearing was continued until Friday, February 13, at 10:13 a.m. Arraigned in Federal court on February 13, the accused entered a plea of guilty and was fined \$65 (13 five-dollar bills). The arresting officers were State Game Warden Huhn and U. S. Game Protector J. E. Perry.

Found Guilty of Selling Wild Ducks.--A verdict of guilty was returned by a jury in Federal court at Detroit, Mich., on February 12, against a defendant charged with selling

30 wild ducks in violation of the migratory-bird treaty act. The offender was sentenced to pay a fine of \$150 and, in addition, to serve two months in jail. Another individual arraigned in the same court on February 11 on a similar charge but involving a lesser number of birds was likewise found guilty after trial by jury. He was given a choice of a \$250 fine or a \$100 fine and one month in jail. He elected to pay the smaller fine and serve the jail sentence. The evidence in the above cases was submitted by Protector M. A. Charlton through cooperation with State Conservation Officers McDonough and Leggett.

Catching Night Hunters a Crafty Business.--As indicating some of the conditions encountered in the field by Federal game protectors, the following experience by Protector Frank Clarkson, of Texas, as related by him in connection with the recent apprehension of night shooters, two of whom covered him with shotguns, will be of interest:

"All three men were using automatic shotguns, and I counted the shots until 27 were fired and then I became tired of counting and fighting mosquitoes at the same time. There were more shots fired after I quit counting than there were before. I had to lie perfectly still until well after dark and the air was gray with mosquitoes, and my hands and face were all swollen up when I finally got out of the marsh.\*\*\* Until I ran into an alligator trail it was hard going, as I was not advancing over a yard every ten minutes and then it was impossible to be perfectly quiet. I was hoping I wouldn't run into the owner of the trail, as he was no doubt a large one as the trail was about 16 inches wide and a foot high and just slick enough to make easy going. It was rather a messy experience, and I ruined a perfectly good outdoor suit and a leather coat, but if you catch Texas marsh night hunters you have to use marsh craft. Wood craft doesn't do you any good."

Importations.--The first large shipment of parrots brought in since the issuance of the Executive order of January 24, 1930, arrived at New York on February 10 from Corinto, Nicaragua. This shipment contained 100 birds, which were sent to Hoffman Island for quarantine in accordance with regulations of the Public Health Service. A shipment of 100 parakeets from Japan was refused entry at San Francisco by the Public Health Service on January 24 on account of their being too crowded, and another shipment of 200 parakeets from Cuba was held up at New York on February 4 because of improper crating, but was allowed to proceed after being boxed in accordance with regulations and receiving the approval of the Public Health authorities. Among the rarer birds imported during the month were two black-headed parakeets from British Guiana.

The season for the importation of quail from Mexico began on February 16, and authorizations have been issued by the Mexican authorities for the export of 260,000 birds at the three ports of Laredo, Brownsville, and Eagle Pass, Tex., during this season.

An Outbreak of Parrot Fever. according to the Associated Press, was reported from Brooklyn, N. Y., on February 12, resulting in the death of one man and the illness of four members of his family, who are confined to a hospital in Brooklyn. The disease is believed to have been contracted from parakeets sent to the family from Habana, six of which birds arrived on December 31. A second death traced to the same shipment of birds occurred on February 16.

Treaty-Act Cases Terminated--Reports Received during January

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Ferrier*	1	Missouri	Offering for sale and selling geese	\$100
Charlton	1	West Virginia	Killing a heron	\$1
"	1	" "	Possessing a snowy heron	\$1
Clarkson	2	Texas	Offering for sale and selling ducks	\$10 each
Johnson, Barbe**	1	Louisiana	Possessing ducks in excess of limit	\$100
Tonkin, London*, Miner*	3	California	Killing and possessing geese in excess of limit	\$50 each
Whitehead	2	Georgia	Killing and possessing doves in close season	\$10 each
Whitehead, Price**	1	"	Killing and possessing ducks in close season	\$10
Whitehead, Rountree**	1	"	Hunting and possessing doves in close season	\$10

Treaty-Act Cases Reported during January

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	1	Illinois	Hunting wood ducks and attempting to kill ducks after sunset
"	1	Kentucky	Killing and possessing coots in close season
Barmeier, Ferrier*	1	Missouri	Offering for sale and selling geese
Barmeier, Ott**, Quarry**	1	"	Possessing ducks in storage in close season
Barmeier, Voerg*	2	Kentucky	Killing migratory waterfowl from a motor boat
" "	1	"	Killing ducks in close season
" "	1	"	Killing and possessing coots in close season
Charlton	1	West Virginia	Possessing a heron
Clarkson	3	Texas	Offering for sale and selling ducks
Creech	3	Illinois	Exceeding 2 days' possession limit of ducks
"	1	"	Killing ducks after sunset
Hull*	3	Utah	Hunting ducks after sunset
Jans*	1	Illinois	Killing ducks and coots from a motor boat
Jans*, Westine*	3	"	Killing coots from a motor boat
Johnson, Barbe**	1	Louisiana	Possessing ducks in excess of limit
Lewark	1	North Carolina	Killing ducks in excess of limit
Mushbach, Hull*, Argyle**	1	Utah	Hunting waterfowl from a motor boat
Perry, Allison**	1	Kansas	Killing ducks from a motor boat
Perry, Concannon*, Lawhorn*	2	"	Killing coots and ducks from a motor boat
Steele*, Lawrence*	1	Iowa	Killing a wood duck
" "	2	"	Possessing wood ducks
" "	3	"	Killing and possessing wood ducks
Tonkin, London*, Miner*	3	California	Killing and possessing geese in excess of limit
Woods*, Davis**	4	Louisiana	Killing ducks during close season
Woods*, Lettsworth**	3	"	Killing ducks during close season
Woods*, Martin**, Martin**	4	"	Hunting ducks in close season

\* U. S. deputy game warden.

\*\* Deputy State game warden.



# 25 THE SURVEY

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## GENERAL NOTES

Inspects Okefenokee Swamp and Blackbeard Island, Ga.—Mr. Redington left Washington on March 9, in company with four members of the Senate Committee on Wild Life Resources--Senators F. C. Walcott, of Connecticut, chairman; Harry B. Hawes, of Missouri; Peter Norbeck, of South Dakota; and Key Pittman, of Nevada--and with Morris Legendre, secretary of the committee, and Dr. T. Gilbert Pearson, president of the National Association of Audubon Societies, to inspect wild-life conditions in the Okefenokee Swamp, in the northern part of Georgia. On the 10th, after being met by a delegation of business men and local game enthusiasts, headed by Senator W. F. George, of Georgia, the party, starting from Folkston, Ga., took an hour's airplane flight over the swamp to get a general picture of the entire area, and that evening were the guests at a banquet given by local clubs at Waycross. On the next day they went to Floyds Island, in the swamp itself.

The party was able to obtain a good idea of the wild-life conditions of the region, spending the better part of three days in the swamp, the total extent of which is estimated to be approximately 500,000 acres. The area is probably the only one of its kind in North America, and many persons are urging that it be set aside as a refuge for various species of swamp-inhabiting birds, mammals, and reptiles, and as a great outdoor biological laboratory. It consists of islands grown up to longleaf and slash pines, and of swamps where fish are plentiful, alligators, rattlesnakes, and moccasins are common, and cypress grows abundantly. Many species of migratory waterfowl are found in the swamp in the wintering season, and the wood duck is a permanent resident there. Sandhill cranes were seen, as well as herons of several kinds, bald eagles, and many species of song and insectivorous birds.

Following the trip to Okefenokee Swamp, Mr. Redington and Doctor Pearson spent a day on Blackbeard Island, off the southeastern coast of Georgia, where the Biological Survey maintains a bird refuge. The area of Blackbeard Island as given by an early surveyor, DeBrahm, in 1760, was placed at about 1,600 acres. In sizing up the island, Mr. Redington decided that the area is much larger than the original estimate recorded by DeBrahm, probably between 5,000 and 6,000 acres in all. It serves as a refuge for approximately 65 species of birds, of which 34 are migratory. Waterfowl, as well as large numbers of shorebirds, are found in the extensive marshes adjoining the higher land of the island. There are also present many deer and some raccoons and minks.

Attend Club Banquets.—On February 26, Mr. Redington, in company with H. W. Terhune, executive officer of the Alaska Game Commission, attended a dinner given by the Camp Fire Club of America in New York City, and on the 28th the annual banquet of the Wilderness Club in Philadelphia.

Hearing on Proposed Dam in Upper Mississippi.—The national organization of the Izaak Walton League of America held a hearing at Winona, Minn., on March 7, to consider the possible effects on the Upper Mississippi River Wild Life and Fish Refuge of the proposed canalization of the Upper Mississippi River by the War Department, and especially the

proposed Alma Dam, which it is understood will be the first link in this program of navigation improvement. Members of the Survey who attended this meeting included Mr. Henderson, Ray C. Steele, superintendent of the refuge, and F. M. Uhler, of the Division of Food Habits Research, each of whom presented data. Mr. Uhler spoke on the effects of a higher and sustained stage of water on the wild-life resources of the refuge area, based on his observations of the flora and fauna of the refuge during the past three years. Other testimony included statements by army engineers and by representatives of the United States Bureau of Fisheries, of the State Game and Fish Department of Minnesota, and of various local and State chapters of the Izaak Walton League.

Doctor Shillinger to Head Wild-Life Disease Work.--Investigations of the diseases of wild life have been consolidated in a single project of the Survey, under recent authorization of the Secretary of Agriculture. Dr. J. E. Shillinger, senior veterinarian, will be in charge of the work. The object is to coordinate the study of wild-life diseases, chiefly those affecting mammals and birds, and to determine the causes of outbreaks and methods of control. Laboratories will be established in Washington, D. C., and in the field, where observations and investigations will be undertaken of disease-producing agents and of disease conditions among animals and birds, both in the wild and under controlled conditions, as on fur and game farms. The wild-life disease investigations hitherto undertaken by the Bureau have been directed by the several divisions concerned, either independently or in cooperation with Federal, State, or other responsible institutions. Such cooperation, of course, will be continued in accordance with the desires expressed by officials of veterinary colleges and other research institutions and individuals doing work in this field of wild-life investigation. In the past the various disease investigations have included the so-called "duck sickness" in alkaline and other areas in Utah and elsewhere; outbreaks of diseases on fur farms, and maladies of blue foxes in Alaska, including a cooperative research project with the University of Minnesota of epizootic diseases of fur animals and one with the University of Southern California on research in diseases of domestic rabbits; parasitic and other diseases of reindeer in Alaska, and related diseases in Scandinavian countries; and mortality among elk in Wyoming and among deer in other parts of the country. Other studies in cooperation with State departments and institutions and other Federal bureaus have been concerned with maladies of upland game birds, quail and waterfowl parasites, "kewks" of swans in the Currituck Sound region, protozoan parasites of ducks in Louisiana and elsewhere, phosphorus poisoning among ducks in the vicinity of artillery proving grounds, lead poisoning in waterfowl from eating the shot deposited in the mud on favorite shooting grounds, and suspected poisoning of valuable wild-life forms in connection with insect control by spraying and dusting and with weed eradication by chemical means.

Doctor Shillinger, leader of the new project, has been engaged on fur-animal disease investigations in the Division of Fur Resources for the past four years, prior to which he was an associate veterinarian and veterinary inspector of the Bureau of Animal Industry for 13 years, except for a period of war-time service in the Army Veterinary Corps.

Legislation of 71st Congress of Interest to Bureau Summarized.--With the work of the 71st Congress ended, it is now possible to summarize the enactments resulting in appropriations for work of the Bureau for this and the coming fiscal years. Appropriations totaling \$2,585,370 have been provided, of which \$356,200 was included in deficiency bills and is now available for expenditure. In the first deficiency act \$300,000 was appropriated for emergency construction and other work to assist in relieving the unemployment situation.



The items included in this act were listed in the February issue of THE SURVEY (pages 15-16). The second deficiency act carries an appropriation of \$50,000 for operations at Malheur Lake Reservation, Oreg. It provides for making surveys, investigations, and studies, for obtaining abstracts of title, and for cooperating with the Department of Justice and other branches of the Government in all matters incident to acquiring and quieting title to the lands and appurtenant water rights in the name of the United States, and to defending water rights for the refuge. The second deficiency act also carries an appropriation of \$6,200 to provide for increases in salaries for the current fiscal year due to adjustments under the Brookhart Salary Act. The remaining \$2,229,170 is included in the agricultural appropriation act for the fiscal year 1932. The following table shows the amounts appropriated for the fiscal years 1931 and 1932 in agricultural appropriation acts and the amounts of increase or decrease for 1932 in comparison with 1931:

Appropriation	1931	1932	Increase or Decrease
<b>Salaries and Expenses:</b>			
Administrative expenses .....	\$77,520	\$83,280	\$ +5,760
Maintenance of mammal and bird reservations .....	80,000	101,830	+21,830
Food habits of birds and mammals .....	99,700	107,660	+7,960
Control of predatory animals and rodents .....	574,150	590,480	+16,330
Production of fur-bearing animals .....	59,000	64,360	+5,360
Biological investigations .....	72,950	83,110	+10,160
Protection of migratory birds .....	192,000	220,120	+28,120
Reindeer, game, and fur bearers in Alaska .....	167,000	155,650	-11,350
<b>Upper Mississippi River Wild Life Refuge:</b>			
Administration .....	47,000	47,780	+780
Acquisition of land .....	150,000	150,000	-----
<b>Bear River Migratory Bird Refuge:</b>			
Administration .....	19,000	19,900	+900
Development and acquisition of land .....	112,000	-----	-112,000
<b>Migratory Bird Conservation Act:</b>			
Acquisition of land .....	200,000	400,000	+200,000
Migratory Bird Conservation Commission .....	5,000	5,000	-----
<b>Cheyenne Bottoms Migratory Bird Refuge:</b>			
Acquisition of land .....	50,000	200,000	+150,000
<b>Total</b> .....	<b>1,905,320</b>	<b>2,229,170</b>	<b>+323,850</b>

Details regarding the increases were set forth in a tabulation of budget estimates appearing in the Official Record of January 1, 1931. The only changes in the figures there given are a reduction of \$340 in the administrative-expenses appropriations and the addition of \$13,500 to maintenance of mammal and bird reservations for the purchase of land to add



to the Niobrara Reservation, Nebr., which items were mentioned in THE SURVEY for January (page 2).

Other legislation pertaining to the activities of the Bureau or of interest to it enacted at the last session is summarized below:

Public Law No. 664, approved February 14, 1931, amends the Alaska game law by correcting certain inequalities in license fees, coordinating the fiscal activities of the Alaska Game Commission under the Department's commissioner for the Territory, and otherwise facilitating the work of the Commission, especially in its field operations.

Public Law No. 668, approved February 16, 1931, authorizes the Secretary of Agriculture to furnish subsistence to employees in Alaska and to purchase personal equipment and supplies, for which deductions from salary will be made to meet the cost, thus facilitating the work of the Department in the Territory.

Public Law No. 776, approved March 2, 1931, authorizes the Secretary of Agriculture to carry out his ten-year cooperative program for the control of predatory and other wild animals injurious to agriculture, horticulture, forestry, animal industry, wild game, and other interests, and for the suppression of rabies and tularemia in predatory or other wild animals. Appropriation of \$1,000,000 for each of the years from 1933 to 1941, inclusive, to carry out the program is authorized. Because of the lateness of the passage of the act, no item was included for operations thereunder in the second deficiency bill for the fiscal year 1932.

Public Law No. 783, approved March 3, 1931, provides for Saturday half-holidays for certain Government employees.

Public Law No. 798, approved March 3, 1931, requires contractors and subcontractors engaged in constructing, altering, or repairing any public building of the United States or of the District of Columbia situated within the limits of the United States to pay their employees the prevailing wage rates when such rates have been established by private industry.

Public Law No. 826, approved March 4, 1931, authorizes the transfer of jurisdiction of Sullys Hill National Park, N. Dak., from the Department of the Interior to the Department of Agriculture, to be maintained by the Biological Survey as the Sullys Hill National Game Preserve, and also the acquisition after July 1, 1932, by purchase or otherwise of not to exceed 3,000 acres as an addition to the Sullys Hill Preserve, when appropriations are made available for the purpose.

Public Law No. 843, approved March 4, 1931, extends the boundaries of Wind Cave National Park, S. Dak., by adding 325 acres. An item in the second deficiency act makes available \$50,000 to the National Park Service, Department of the Interior, for the purchase of land and the improvement of the water system at the game preserve and park headquarters.

Public Law No. 869, approved March 4, 1931 (second deficiency act), aside from the appropriations for Malheur Lake Reservation and for salary adjustments on account of the Brookhart Act mentioned under summary of appropriations, authorizes expenditures for public buildings of interest to the Bureau as follows:

Billings, Mont., post office and courthouse, \$240,000; Cheyenne, Wyo., Federal office building, \$200,000; Columbus, Ohio, post office and courthouse, \$2,275,000; Hot Springs, S. Dak., post office, \$90,000; Marysville, Calif., post office, \$150,000; Monte Vista, Colo., post office, \$115,000; Ogden, Utah, Forest Service building, \$300,000; Peoria, Ill., post office and courthouse, \$320,000; Pocatello, Idaho, post office and courthouse, \$220,000; San Antonio, Tex., post office and courthouse, \$400,000; Washington, D. C., extensible building for Department of Agriculture, \$12,800,000.

A number of bills in which the Survey was interested failed of passage. Some of the more important were:

A bill (S. 2350) to provide for the improvement and extension of game breeding and refuge areas in the Wichita National Forest and Game Preserve in the State of Oklahoma. (Passed Senate.) This bill carried an appropriation of \$145,000 for construction of fencing and buildings, for the improvement of breeding, resting, and observation areas, and for facilitating the study and observation of animals and birds and their habits by the Biological Survey and the public.

A bill (S. 5813) to provide for the consideration of wild-life conservation in connection with the construction of public works or improvements. (Passed Senate and reported to House.)

A bill (H. R. 13276) to establish the Needles Rock Wild Life Refuge in the State of Nevada. (Passed House.)

A bill (H. R. 17030) to authorize the establishment of a migratory-bird and game refuge along the Illinois River. (Not reported.)

The Establishment of Two National Parks was authorized by the 71st Congress. By act of May 14, 1930 (Public Law No. 216) the area heretofore known as Carlsbad Cave National Monument, N. Mex., was designated as the Carlsbad Caverns National Park. The new park contains approximately 719 acres, and all forms of wild life found thereon, including numerous species of birds and bats and other small mammals, will be protected. It adjoins a large State game refuge, where mountain sheep, mule deer, and antelope are found. Public Law No. 835 (approved March 3, 1931) provides that all alienated lands within Isle Royale in Lake Superior, Mich., be established as a national park as soon as title thereto shall have been vested in the United States. When established this park will give protection to moose, caribou, and other interesting forms of native wild life.

"Beware the 500th Wood Tick!"--With this ominous warning begins an article on the investigations of tularemia being carried on by Dr. R. G. Green, professor of bacteriology in the University of Minnesota Medical School and cooperator of the Biological Survey in a study of the infectious diseases of fur animals, in a recent issue of Minnesota Chats, published by the university "for the parents of students." Doctor Green reports, says the article, that "two-tenths of one per cent of the wood ticks in Minnesota woodlands" are carriers of tularemia, which he feels certain is the disease that has decimated the numbers of the rabbits and ruffed grouse of Minnesota from time to time.

"To reach a determination of the probable extent of tularemia infection in the Minnesota woods," continues the article, "Dr. Green and his assistants took a rambling sample of ticks over an area of 20 square miles. An extract prepared from the insects was then injected into guinea pigs on a plan of geometric progression. Twenty samples, each made from one tick, were injected into 20 pigs. Twenty samples made from 10 ticks each were injected into 20 other pigs, and 20 more samples, each made from 100 ticks, were injected into a third group of 20 guinea pigs. Obviously the disease would have to be more prevalent if the guinea pigs began catching it from a single tick than if they caught it from the remains of some one among 100 wood ticks. So tremendous a number of instances were formed by the progression thus produced" that it took an entire year to perfect "the tables of probabilities that showed the actual likelihood of infection. The result came out as two-tenths of one per cent." Doctor Green says that "tularemia is so infectious that any laboratory worker who



studies it is almost certain to contract it. I know of 28 scientists who have contracted tularemia, which is almost a 100 per cent record among those who have tackled the problem of this disease." In the same issue of Minnesota Chats, applying the results of Doctor Green's studies to the academic field, the editor asks "How contagious are lessons?" "This scientist points out," he says, "that every person who has made a serious study of tularemia has caught it. In all, it has affected 28 research workers. \*\*\* What hundreds of students have devoted attention to what scores of studies and never become infected at all! \*\*\* Perhaps Dr. Green's technique should be studied. How glorious if young people could enter a class in Greek with the certainty that they would 'catch' a Grecian attitude and spirit. How such a method would simplify the intricacies of the higher mathematics. Such an eventuation somehow seems remote. But with a teacher who is a real 'carrier' and a susceptible group of students the thing does undoubtedly happen every quarter. No one claims, however, anything like the 100 per cent record that tularemia has set up among its adherents."

Addresses Weekly Meeting of Bureau Staff.--At the regular weekly Bureau staff meeting on March 3, Doctor Green talked on the cooperative work being conducted on the diseases of fur animals. He gave a brief resume of the research work on encephalitis in foxes, and touched on the broader aspects of disease as it relates to wild life. Doctor Green expressed the theory that the extensive losses that follow an abundance of wild life are frequently caused by epizootic diseases. Such diseases, he stated, do not flourish when animals are scarce and widely separated. To substantiate this opinion, he cited numerous instances of the sudden disappearance of game in Minnesota following a year of abundance and ample legal protection. Doctor Green plans to extend his cooperative studies in wild-life diseases, and through the State game commission has arranged to obtain a tract of approximately 27 square miles upon which to carry on experiments. Part of this will be made a game refuge, and the first study to be undertaken will be to determine whether any diseases can be demonstrated in the area that might at a later date develop to epizootic proportions. No infectious disease has thus far been found in animals or birds of the tract, but tularemia has been found in woodticks. It is not expected that the animal population will support epizootic diseases for several years.

Death of Alice M. Winfield.--Those who knew Miss Alice Margaret Winfield, for many years a clerk in the Biological Survey, will regret to learn of her death, which occurred on March 7, at Warrenton, Va., where she had spent the winter. Miss Winfield was a native of Rockingham County, Va., and would have been 85 years old on March 25. She was appointed to a clerkship in the Department of Agriculture in 1882, and, after service in various offices, including a detail to the Civil Service Commission, was transferred from the Bureau of Animal Industry to the Biological Survey in 1904. After 15 years of service here, she retired when the Civil Service Retirement act took effect on August 20, 1920.

In the Biological Survey Miss Winfield served in what was then the Division of Game Preservation. She was always faithful and attentive to her duties, which consisted of bibliographic work, compiling and carding data on conservation and game laws, and indexing serial publications, which formed the basis of an extensive card catalogue now used in the Division of Game and Bird Conservation. She was educated in Virginia private schools and in the convent at Georgetown, D. C., and was proficient in statistical work and in translating French and German. She possessed an unusual and forceful personality, and formed a number of warm friendships among her associates in the office, with whom, even after her retirement and nearly to the close of her life, she kept frequently in touch.

Doctor Nelson Honored by Forestry Association.--Dr. E. W. Nelson, former chief of the Biological Survey, has been recently elected a vice president of the American Forestry Association.



Visitors.--Maj. A. Willis Robertson and Judge William S. Snow, of the Virginia Department of Game and Inland Fisheries, visited offices of the Bureau on February 24.

Return from Florida.--Miss Edith J. Smith, budget and allotment clerk in the Administrative Office, and Miss Mamie S. Crow, head of the bookkeeping and record work of the Accounts Office, returned to their official duties on March 21 after a three weeks' vacation in Florida.

Official Publications.--The following official publications of the Bureau were issued in March:

"Local Bird Refuges," by W. L. McAtee, Farmers' Bulletin 1644-F, 14 p., illus. Received March 12. (Supersedes Farmers' Bulletin 1239.)

"Wild-Duck Foods of North Dakota Lakes," by Franklin P. Metcalf. Technical Bulletin 221-T, 72 p., illus. Received March 26.

"Laws and Regulations for the Administration of the Aleutian Islands Reservation, Alaska." Service and Regulatory Announcement--B. S. 74, 6 p. Received March 28.

Radio Talk.--A radio talk on "New Regulations under the Migratory Bird Treaty Act" has been scheduled for April 10 in the Departments' "Uncle Sam's Naturalist" series, and one on "Controlling Moles" for April 22 in the "Primer for Town Farmers" series.

#### BIOLOGICAL INVESTIGATIONS

To Study Birds in Haiti.--In company with Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution, F. C. Lincoln sailed for Port au Prince, Haiti, on March 17. He plans to remain in that country until the early part of June and will endeavor to determine the status of many species of North American birds that spend the winter in Haiti or pass through on their annual migrations. It is believed that much important information will be obtained, particularly with reference to the last dates of departure northward, a subject on which the migration files are barren. The party expects to make the ascent of Morne la Hotte and to do work on the islands of Gonave and Beata, the latter being a possession of the Dominican Republic.

#### FOOD HABITS RESEARCH

Visits Washington Office.--J. Paul Miller, engaged in forest-research work at Amherst, Mass., spent some weeks during January and February in the Washington laboratory examining the stomach contents of birds and mammals collected by him in connection with his studies and in further informing himself about methods of conducting food-habits investigations.

Bulletins on Birds Prove Popular.--As an item on publications in the January issue of THE SURVEY seemed to be of general interest, two others are included here: Farmers' Bulletin 1521, "Propagation of Game Birds," had a total distribution of 115,000 copies, while Farmers' Bulletin numbers 1612, "Propagation of Aquatic Game Birds," and 1613, "Propagation of Upland Game Birds," which together superseded it, have achieved a distribution of more than 25,000 and 31,000 copies, respectively, in one year. The second item concerns Leaflet 36, entitled "Gourds for Bird Houses and other Purposes," for which an order for 10,000 copies has been placed with the Superintendent of Documents by a Dayton, Ohio, bottling company. We do not know whether the company is interested in this publication for the first-named or for the other purposes.

Addresses Audubon Society.--E. R. Kalmbach, senior biologist, on the evening of March 28, addressed the Audubon Society of Western Pennsylvania at Pittsburgh, on the European Starling.

Surveys Missouri Pheasant Ground.--During the latter part of March, Wallace B. Grange, cooperative agent, was in Jefferson City and other points in Missouri cooperating with State officials in a survey of Missouri pheasant territory.

## FUR RESOURCES

Confers with Officials on Fur-Animal Conditions.--On March 14 Mr. Ashbrook conferred with Dr. Carl G. Hartman of Johns Hopkins University, Baltimore, Md., in regard to the publication of results of cooperative investigations on the embryology of muskrats. He also interviewed the State game warden of Maryland concerning the annual catch of fur animals in that State. From Baltimore he went to York, Pa., to discuss the rabbit situation with the editor of the National Fancier. While in York he addressed the local post of the American Legion on the subject of furs.

Progress of Muskrat Investigations.--Dr. J. E. Shillinger, accompanied by Dr. Carl G. Hartman and four of his associates from Johns Hopkins University, was in Salem, N. J., March 5 and 6, in connection with the cooperative muskrat investigations. A temporary laboratory was set up in one of the hotels of that city in order to study the reproductive processes in these animals, a prominent muskrat farmer of Salem County having previously arranged with other trappers to obtain the animals for these studies. A number of ova in various stages of development were collected, studied, and photographed, and then placed in a fixative solution for a more extended investigation. Doctor Hartman and his associates were pleased with the arrangements made by Doctor Shillinger for this work, and the results obtained were satisfactory. This is the first record of collecting, observing, and photographing the ova of muskrats.

Visits Field Station.--Doctor Shillinger spent a few days during the latter part of February at the cooperative fur-animal experiment station at Church Creek, Md., conferring with Frank Smith, agent, in charge of the station, who is making a study of the fur-animal situation in Maryland and neighboring States. Doctor Shillinger reports that a number of the pens designed to confine muskrats in order to obtain more accurate information on feeding and breeding habits have been completed. Dr. R. V. Truitt, representing the University of Maryland in this cooperative project, visited the station at the same time and was satisfied with the progress being made. Doctor Shillinger also made a brief survey of conditions in the trapping area in Somerset and Wicomico Counties and learned that the muskrat catch in this region this season is estimated to be less than 50 per cent of normal.

Rabbit Experiment Station Assists 4-H Clubs.--Allen E. Suitor, of the U. S. Rabbit Experiment Station at Fontana, Calif., has been chosen leader of the 4-H Cloverleaf Rabbit Club of Fontana. The first meeting of the club was held at the station on February 21, at which eleven members were present and the program for the first year was outlined. Arrangements have been made to have an exhibit at the San Diego spring rabbit show at Balboa Park, from April 2 to 5, the members planning to display hutches they have constructed and modern types of equipment. The local post of the American Legion extended an invitation to the club to hold a rabbit demonstration at their next meeting.

John W. Meyer, director of the Rabbit Experiment Station, on March 4 spoke to the 4-H Clubs of Orange County, Calif., on the general subject of rabbit raising.

Emergency-Work Program Started at Stations.--Since the emergency appropriation to aid unemployment has been made available, Mr. Meyer has been busily engaged in preparations for the construction of a new rabbit unit of steel and wire at the Rabbit Experiment Station. It is believed that this new type of hutch will be more economical and sanitary and will give greater comfort to does and their litters than the old type. A septic tank to take care of the drainage from rabbit hutches will also be constructed under this emergency program.

Walter G. McBlain, who is acting as director of the U. S. Fur-Animal Experiment Station, at Saratogo Springs, N. Y., during Doctor Hanson's absence, reports that preparations for the construction of a cold-storage plant and new pens for fur animals are progressing. The cold-storage plant, which has been needed for some time, will be used for storing meat, milk, and other products for feeding the animals, and a material saving will be effected in the cost of feeding operations at the farm when this is completed. The fur-animal pens under construction will take care of the animals produced this past season.

Continues Work at University of Minnesota.--Dr. Karl B. Hanson is still on temporary duty at the University of Minnesota, where he is carrying on research work on diseases of fur animals in the laboratories of the Medical School. He has been devoting considerable time to comparing specimens and data collected some years ago at the old fur-farm of the Bureau at Keeseville, N. Y., with the material recently assembled on fox encephalitis. The disease formerly encountered at Keeseville was termed "dummy disease," and Doctor Hanson has demonstrated that this is identical with fox encephalitis.

On March 31, Doctor Hanson addressed a meeting of the Farmers' Institute at the Northeast Experiment Station, Hibbing, Minn., on the subject of "Fur Farming."

Visits Fur-Animal Station.--Taiji Kohmura, of the Agricultural Experiment Station, at Kungschuling, South Manchuria, China, visited the Fur-Animal Station on March 9 to obtain information on raising fur animals in captivity.

#### PREDATORY-ANIMAL AND RODENT CONTROL

On Field Tour to Organize New Cooperative Work.--Mr. Young and W. E. Crouch left Washington on March 23 for various points in New York, Pennsylvania, Indiana, Tennessee, Mississippi, and Florida to inspect field operations and to organize cooperative control work to be undertaken in Florida during the coming fiscal year.

Killed Coyotes in Wyoming.--Assistant Oliver S. Robinson, of the Wyoming District, reports that while a woman was herding sheep near Arvada recently, a coyote entered the flock, sized a sheep by the neck, and let go only after she had hit it with her coat. It bit four additional sheep while she was chasing it, and after a short time returned and killed a sheep that it had already bitten. Mr. Robinson kept on the trail of the animal until he succeeded in capturing it.

Hunter Arthur D. Carr was recently summoned to a ranch near Mayoworth, Wyo., to capture a clever old coyote that had "pulled a fast one" on the turkeys that were being reared within a wire inclosure to protect them from predators. He reports that in the early morning of the previous day "this foxy coyote had visited the turkey pen and determined to feast upon a fat delicious bird." It seemed to realize that its only chance lay in the possibility of frightening the fowls until they would fly over the high wire fence. Its first jump against the inclosure was so successful in bringing its breakfast on wings that it repeated the process until there were 30 turkeys lying dead about the inclosure. Hunter Carr's skill,



however, in setting a trap for the coyote was equally as clever as its own trick, and the next night the turkeys were left in peace.

Unusual Coyote Habit Disclosed.--Hunter Edgar Veigel, of the Wyoming District, reports that in response to a call for help from ranchers south of Afton, who were losing sheep through the depredations of coyotes, he established a poison station along the adjacent foothills. Several days passed before the coyotes began feeding on the dummy baits, and after they had fed unmolested for about two weeks, he exposed a few containing poison. The first night he picked up two male coyotes. Mr. Veigel followed the coyote trail about 100 yards and found evidence revealing unusual habits in these two coyotes. There in the hillside was a den in which they had been hiding during the day while they fed upon the conveniently placed station at night. From all indications this pair of killers had been seeking shelter and cover from danger in this den between sorties for killing and feeding upon lambs of the near by flocks.

Hunting Mountain Lions Is No Easy Task.--John W. and Sears M. Willis, of the Utah District, hunting mountain lions with dogs in the Zion Canyon country, after some arduous pursuits, were successful in taking four adult animals. They treed one mountain lion after following its trail four days through some of the rougher parts of the Zion Canyon area. In two or three places they had to lift their dogs over ledges with ropes. The dogs started on the trail of one of the lions about 10 o'clock in the morning and the hunters followed until 8 o'clock at night, when they reached a point near which the dogs had the lion treed on top of a big ledge. It was so dark that they found it necessary to build a fire so that one of them could see to crawl up through the ledges to shoot the lion. When it was shot, it fell over the ledge into some rough country bordering a deep canyon. The hunters were compelled to remain there all night. The following morning they got their dogs down out of the ledges with ropes, recovered the lion, and started for camp, which they reached about dark.

Large Wolf Taken in Arizona.--The buffalo wolf of Plains fame, which proved so destructive to "white-faced buffalo" after the bison had been exterminated on the western grasslands, still continues to take heavy toll of Hereford cattle in Arizona, the rugged contour of Arizona's highlands furnishing the lobo with safe retreats. The common practice of taking these marauders in the early days was with packs of fleet wolfhounds. In the rougher sections of the West such packs of dogs were of little value, as they ran only by sight. Canyons, washes, boulder piles, and heavy vegetation so obstructed their view that the wolf easily made its get-away. Government Hunter Carl Larsen, recently captured, near Rice, Ariz., the first wolf ever taken in Arizona with dogs as far as the Bureau has record. While following a cold mountain-lion track with his nine hounds, Larsen crossed the wolf's trail made in 12 inches of snow and followed it with his pack about half a mile, when he jumped the wolf. This animal, having recently gorged itself with veal, led the pack about 4 miles, when, becoming winded, it turned to fight. While the dogs harassed it, Hunter Larsen approached close enough for a shot. The wolf proved to be an old male, weighing more than 150 pounds and measuring 6 1/2 feet from the end of its nose to the tip of its very short tail. It is a far cry from running wolves on the plains of Texas in the early '60's to taking a record animal in the mountains of Arizona in 1931, but such a thing has happened. The nearly white skin of this wolf is now a Bureau specimen.

Hunter Bitten by Rabid Coyote.--Hunter Ray Williams, of the Idaho District, recently had an unpleasant experience with a rabid coyote that he had run down in deep snow. The coyote gripped his horse's leg and held on. In attempting to dislodge the animal, Williams was bitten. The coyote's head was sent to Boise for bacteriological examination and the case was diagnosed as rabies. Williams has taken the Pasteur Treatment. No further cases have been reported.

"Banded" Coyote Captured.--Early this year there came to the attention of Luther J. Goldman, leader of predatory-animal control in Idaho, a newspaper clipping regarding the capture, in the vicinity of Kooskia, of a coyote wearing a dog collar that bore 1921 Jefferson County dog license No. 231. The collar was very tight on the coyote's neck, and beneath it the skin was completely bare. Inquiry disclosed the following facts: About 10 years ago this coyote, then a pup, was captured by a former resident of Rigby, who brought it home and made a pet of it. It followed members of the family about and was curbed only when its appetite for wandering chickens became too keen. When it grew older it was chained, but shortly broke loose and since then has apparently been wandering about. The animal was retaken in December, 1930, near Kooskia, which is at least 300 miles by air from Rigby, 200 miles of which is over extremely steep mountain country. When taken, the coyote was in good condition, and residents in that vicinity believe it to be the animal that was seen there last winter and summer. This furnishes an interesting instance of the extensive wanderings of coyotes under certain conditions and indicates the difficulty of their control.

Coyotes in Florida.--The Florida Department of Game and Fresh Water Fish, under date of February 16, wrote that reports have come to its office that two or three months ago a party in the vicinity of Jamieson, Fla., brought 14 coyotes from Idaho and released them in the State. "One of the residents of that section," says the letter, "brought to our office one of the coyotes that he had killed. This was some two or three weeks ago, and at that time he stated that seven of the original fourteen had been killed and that they were going to attempt to get the others. They have not been there long enough to breed. Just what damage they have done we can not say as we have no accurate information on it."

Cougar Picture Chosen for Department's First Radiovision Broadcast.--The first radiovision broadcast of a Department of Agriculture film was made on March 9, when station W3XK, the Jenkins television transmitter, put on the air "The Cougar Hunt," a Biological Survey motion picture recently released by the Office of Motion Pictures. The picture was broadcast in half-tone, direct from the film, on a wave length of 145 meters.

Anti-rat Campaign in New Hampshire.--Ernest M. Mills, leader of the New England District, conducted a state-wide one-day anti-rat campaign in New Hampshire on town-meeting day, March 10. More than 3 tons of bait material, or enough for half a million individual rat baits, were distributed to more than 4,000 farmers throughout the entire State on the same afternoon. Each farmer obtained three different kinds of freshly prepared bait, packed in half-pint, waterproof cartons. Raw hamburger, fish, and cereal mixed with red squill were used. Other similar campaigns have been scheduled for Rhode Island, Massachusetts, and Connecticut.

Rat Control with Squill Is Inexpensive.--Request was recently made to the Bureau for assistance in getting rid of rats in the Smithsonian Institution group of buildings in Wash-



ington, D. C., which had become infested with these pests. Rat-control Specialist Frank N. Jarvis supervised the exposure of red-squill baits, which resulted in a 100 per cent clean up at a total cost to the Smithsonian Institution of only \$1.70. A commercial exterminating company, which had also heard of the rat infestation, offered a contract to the Institution to control the rodents in the buildings, on the basis of a 12-month agreement, for \$80 a month. Needless to say, it was not accepted.

"Bioassays: A Handbook of Quantitative Pharmacology" is the title of a 958-page volume written by Dr. James Clyde Munch, director of pharmacological research with a Philadelphia company and consulting pharmacologist of the Bureau of Biological Survey, and recently published by the Williams & Wilkins Company, Baltimore. The scope of this book and the tremendous task involved in its preparation are indicated in the following extracts from Doctor Munch's preface: "While there were several treatises which discussed certain quantitative phases of pharmacology, no critical compilation of general information had been published. To meet this need, an extensive and comprehensive search of the literature upon quantitative pharmacology (bioassays) was undertaken. \*\*\* Over 17,000 references have been tabulated, abstracted, and consulted in the original whenever available. \*\*\* Specific reference is made to over 5,000 citations, which contain definite information or which mark progress in the development of bioassay methods. \*\*\* In writing this book, I have attempted to condense the vast amount of information published previous to 1930; to present suitable methods of quantitative pharmacology; to focus attention upon the accuracy of experimental results; and to prevent unnecessary duplication of efforts." Doctor Munch has been engaged in pharmacological work for many years, having been formerly a member of the staff of the Bureau of Chemistry. He is the author of several publications of the Department, including, since becoming connected with the Biological Survey, joint authorship of Technical Bulletin 134, "Red-Squill Powders as Raticides" and of Technical Bulletin 238, "The Pharmacology of Thallium and Its Use in Rodent Control" (now in press).

#### LAND ACQUISITION

To Survey Refuge Boundaries.--A. A. Riemer, accompanied by Associate Cadastral Engineer Albert Smith, Jr., left Washington, on March 11, for Chicago, where a survey party was organized consisting of Mr. Smith and Transitmen A. J. Bienfang, R. L. Monroe, and M. E. Stair. The party proceeded to Socorro, N. Mex., where they will be temporarily stationed while surveying the boundaries of the Carlsbad and the Rio Grande Bird Refuges. It is planned, under the emergency relief measure, that by the end of June, 1931, the boundaries of 21 refuges will be surveyed and marked.

To Negotiate Purchase of Lands.--Robert M. Rutherford, associate land valuation engineer, left Washington on March 9 for points in Nebraska, South Dakota, North Dakota, Wyoming, Nevada, California, and Oregon, to negotiate for the purchase of lands and to conduct investigations relating to their acquisition, including inspection of field parties and studies of local land values. It is expected that this assignment will keep Mr. Rutherford in the field until about the middle of May. Daniel H. Janzen accompanied Mr. Rutherford to North Dakota to assist in negotiations for the acquisition of lands in that State.

Progress of Field Parties.--The field party under the direction of Rudolph O. Gustafson has completed work in Florida, and is now engaged in the examination of areas in Texas.



George D. Chittick's party was forced to discontinue work in Arkansas because of high waters and is now working in Mississippi. Carey H. Bennett's party is continuing work in Oregon.

Resume Land-Appraisal Examinations.—Albert J. Rissman and Howard J. Sargeant left Washington on March 23 to resume land-appraisal examinations, their first assignment being in Idaho.

Four Additional States Pass Enabling Acts.—The legislatures of the States of Oregon, Indiana, Alabama, and Texas have recently passed enabling acts authorizing the purchase of lands within their boundaries for migratory-bird refuge purposes, in accordance with section 7 of the migratory-bird conservation act.

Appointments.—Albert Smith, Jr., was appointed associate cadastral engineer, effective March 6. A. J. Bienfang, R. L. Monroe, and M. E. Stair were appointed transitmen, effective March 12. Oswald W. Recroft was appointed transitman, effective March 13, and was assigned to Charles Cook's survey party, which is now working on the Cape Romain Migratory Bird Refuge in South Carolina. Robert C. Kirchner was appointed transitman on March 16, and was assigned to assist Armand F. Allard, who is now working on the Salt Plains Refuge in Oklahoma, but will soon take up survey work on the Niobrara Refuge in Nebraska. Donald B. Taverner was appointed transitman on March 19, and will be assigned to one of the survey parties to be organized under the emergency relief measure. Franklin C. Nielsen has been appointed transitman, effective April 1. Miss Mary E. Savage, of Minneapolis, Minn., was appointed stenographer in the Winona office, on March 2, to assist in handling the work incident to the acquisition of lands for the Upper Mississippi Refuge.

#### GAME AND BIRD CONSERVATION

Talbott Denmead Transferred to Bureau of Fisheries.—Enforcement of the recently amended Federal black-bass law, to regulate interstate transportation of large- and small-mouthed black bass, will be directed by Talbott Denmead, who was transferred to the Bureau of Fisheries, Department of Commerce, from the Biological Survey, effective March 24, to become law-enforcement officer in a newly created division in the Fisheries Bureau. The request for his transfer was approved by Mr. Redington on the ground that Mr. Denmead's experience covering a period of ten years with the Biological Survey in enforcement of the Migratory-Bird Treaty and Lacey Acts, particularly with those phases that are concerned with restrictions on illegal interstate commerce in game, has peculiarly fitted him for this specialized type of work in the Bureau of Fisheries, the first law enforcement work of this character of that bureau. Mr. Denmead served the Biological Survey for six years as deputy chief and acting chief U. S. game warden, and for the last four years as assistant U. S. game conservation officer. Before coming to the Biological Survey he had been a member of a special game and fish commission of Maryland, acting State game warden and chief deputy in the Conservation Commission of that State, president of the Maryland State Game and Fish Protective Association and the Maryland State Council of the Izaak Walton League of America, secretary of the Maryland State Audubon Society, and was at one time a senator in the Maryland Academy of Sciences. He is a member of the American Ornithologists' Union, the American Game Protective Association, and the American Fisheries Society.

Mr. Denmead is the author of several publications of the Biological Survey on conservation matters and of many short articles and stories in sporting magazines on hunting.

and fishing, and at one time was game and fish editor of The American Shooter. He is a member of the Maryland Bar and before his appointment with the Biological Survey had practiced law in Baltimore and had codified for publication the Maryland game and fish laws. While connected with the Maryland Conservation Commission he was active in measures to bring about the passage of the Federal Migratory Bird Law of 1913, and the negotiation of the Migratory Bird Treaty of 1916, assisted in drafting many of Maryland's game and fish laws from 1910 to 1918, and was a member of a special Maryland commission that conferred with a similar commission of Virginia to draft joint legislation for the protection of fish, oysters, and crabs in the Potomac River.

Amended Migratory-Bird Regulations Give Greater Protection to Wild Fowl.--President Hoover on March 17 approved amendments to the migratory-bird treaty-act regulations adopted by Secretary Hyde to carry out the recommendations of the Biological Survey. The chief amendment that affects all parts of the country is one that shortens the open seasons 15 days on ducks, geese (including brant), coots, and jacksnipe. Hereafter, the seasons on these birds will start 15 days later in the northern parts of the country and close 15 days earlier in the southern. One effect of this amendment will be to prohibit wild-fowl shooting in any State in September and during the last half of January. The shortened seasons are prescribed because of the increased natural hazards the birds are experiencing in reduced breeding, feeding, and resting areas, brought about in part as a result of unprecedented drought the past two seasons.

A further amendment makes it illegal hereafter to hunt migratory game birds before noon on the opening day of the season. Other general provisions are concerned with decoys, baiting, and bag limits. Not more than 10 live-geese decoys may hereafter be used or shot over at any one gunning stand, blind, or floating device. Baiting for mourning doves with salt or with wheat or other grains will not be permitted, and it is illegal to take these birds on or over areas so baited. The bag limits on those geese for which open seasons are provided are changed by including brant with geese and limiting the total of all geese (including brant) to 4 a day and 8 in possession.

The remaining amendments have to do with particular species or with seasons over specified areas, as follows: The season on Ross's and cackling geese will be closed throughout their entire range in this country and the close season on snow geese is established in all States bordering on the Atlantic Ocean. In New York, the season on woodcock is so drawn that in the southern part of the State, including Long Island, it will run from October 15 to November 14, and elsewhere in the State the season will be limited to the month of October. Minor changes affect rails and gallinules (except coot) in the States of New York and Washington, where local adjustments are made to reduce the seasons slightly; and mourning doves in Florida, where the season will open on November 20, except in three of the southern counties, where the season remains unchanged.

Quebec Mounted Police to Protect Migratory Birds.--A report recently received through the State Department from the American consul at Quebec, Canada, states that "the local division of the Provincial Association for the Protection of Fish and Game has announced that two mounted policemen will again this spring patrol certain small islands in the St. Lawrence, just eastward of the Island of Orleans, in order that the thousands of migratory birds which rest on these islands during their spring trip north may not be molested by resident hunters as in the past. What is locally claimed to be the only known flock of greater snow geese, a race somewhat larger than the average, comes regularly up the St.



Lawrence River each spring after wintering off the Carolinas. These birds rest several days at this point before continuing north for the summer. Other game birds appearing at this season in thousands are Canada geese, brant, black ducks, pintails, mallards, and teal. These same birds return in the autumn with their young, again en route southward. Similar police patrol was made use of last spring during 23 days of April, and it was reported that the illegal hunting of these fowls had in large measure been stopped.... Occasionally the patrol reported that hunters dressed in white clothes were making use of motor launches painted white, so that their approach would not be readily discerned by flocks on the river surface, the stream being usually partly filled with ice and snow at this time of the year."

Patrols similar in character, to protect the birds common to the United States and Canada under the terms of the Migratory Bird Treaty, are being maintained by the United States Government by means of the game protectors of the Biological Survey stationed in the various districts.

Writes on Game-Bird Shooting.--Four of the 21 chapters of a de-luxe folio volume entitled "Upland Game Bird Shooting in America," recently published by the Derrydale Press, New York, were written by Colonel H. P. Sheldon, United States game conservation officer. The subjects of these are Ruffed Grouse Shooting, Woodcock Shooting, American Snipe Shooting, and Wild Turkey Shooting. The chapters are abundantly illustrated in color and in black-and-white from drawings by various well-known artists. The book, edited by Eugene V. Connett, was issued in a limited edition, and is a masterpiece of the printer's craft, as well as a valuable addition to sporting literature.

Takes Ten Day Field Trip.--W. R. Dillon, assistant U. S. game conservation officer, spent the period from March 16 to 26 in St. Louis, Mo., Omaha and Valentine, Nebr., Chicago, Ill., and other points in these and adjoining States in connection with the administration of wild-life reservations and the enforcement of the migratory-bird treaty act.

Personnel Notes.--U. S. Game Protector L. A. Branchaud, of Washington, D. C., has been assigned to the Niobrara Reservation, near Valentine, Nebr., for three months to assist in supervising the erection of a dwelling and in other construction work on the reservation, the funds for which were appropriated by Congress in the first deficiency act.

U. S. Game Protector George M. Riddick, of Little Rock, Ark., was called to the Washington office for a conference on February 27 and 28 in connection with the construction of a dam on the Big Lake Bird Reservation, Ark., and on other matters.

U. S. Game Protector Birsch during the first part of March was detailed to the Washington office, prior to his assignment to accompany Dr. H. C. Oberholser, of the Division of Biological Investigations, and Capt. Moody Creighton on a motor-boat cruise investigating waterfowl conditions on the Potomac River and Chesapeake Bay in Maryland and Virginia.

Appointments.--Miss Pauline J. Otto, of Kingston, Mo., was appointed typist in the Washington office on March 16 to fill the position made vacant by the transfer of Mrs. Ruth W. Gibbs to the Bureau of Agricultural Economics. Miss Mary Belle Klein, of Leavenworth, Kans., was appointed stenographer in the Washington office, effective March 23.

Death of Deputy Warden Lee.--The Survey has learned with regret of the death on February 18 of United States Deputy Warden Leslie S. Lee, of Animas, N. Mex., from an attack of pneumonia following appendectomy. Sympathy is extended to Major Lee's wife and young daughter, who survive him.



Sympathy is extended to Miss Johanna H. Corsack, clerk-typist in this Division, in the recent death of her mother at Pittston, Pa. Miss Corsack received word of her mother's serious illness on March 27, but before she was able to reach home her mother passed away.

Elk Attract Western Visitors.--With the lightest snowfall on record for many years in Jackson Hole, Wyo., the highway to Rock Springs and Kemmerer, Wyo., is reported to have been open to travel the entire winter, and motorists from Wyoming, Idaho, and Utah have been able for the first time to drive in their own cars to see the elk in their winter habitat on the Elk Refuge near Jackson. Reports to the Biological Survey say that in the first week of March the elk were in exceptionally good condition. They had not concentrated on the feeding grounds, but were widely scattered and rustling for themselves on the mountains in the vicinity. The ground was reported bare in places but frozen to the depth of three feet. Absence of snow, it is feared, may lessen the irrigation water for the hay meadows later on, but Protector Almer P. Nelson states that unless it should become necessary to feed the elk before the end of the winter, the supplies of hay on hand can be carried over for next season. Thus, if there should be only a light yield of hay next year, because of any shortage in irrigation water, the refuge will be prepared to care for the elk, even through severe weather conditions. Ranchmen in the vicinity, however, have been feeding their cattle for the last three months, and most of their hay will be gone before their pasture lands are ready for grazing.

Returns to Alaska.--H. W. Terhune, executive officer of the Alaska Game Commission, who has been in the Washington office since early in January, left for his headquarters at Juneau, Alaska, on March 14. Mr. Terhune's duties in Washington were greatly increased by reason of the extensive revision of the Alaska game law and by the amendments to the regulations as approved on March 7, 1931, by Secretary Hyde.

Shipments of Big-Game Animals.--The following big-game animals have been shipped recently from preserves administered by the Biological Survey: From the National Bison Range, Mont., 2 mule deer to the Belle Isle Zoo, Detroit, Mich.; 23 mule deer to a purchaser in California for an estate at Redwood City; and 2 young buffalo for exhibition at a fair held by the Blackfeet Indians, Browning, Mont. From Wind Cave Game Preserve, S. Dak., 8 young buffalo to the new State game preserve, near Scottsbluff, Nebr., as a nucleus for a herd being built up by the State at that point; 4 buffalo to a purchaser in Kimball, Nebr.; and 2 buffalo to the city zoo at Lincoln, Nebr. From Sullys Hill Game Preserve, N. Dak., 2 white-tailed deer and 3 antelope to the National Zoological Park at Washington, D. C., all of which arrived in fine condition and are now on exhibition. The last-named shipment contained also 6 Canada geese.

Notes on Big Lake Reservation.--Protector Steven B. Crossley, of Big Lake Bird Reservation, Ark., states that the coming of spring finds the lake again well filled with water with thousands of mallards, pintails, and other varieties of ducks obtaining a plentiful supply of food at the refuge. The protector particularly reports large numbers of wood ducks and coots on the area. Numbers of mourning doves and killdeer also have been observed in the vicinity. The State Game Department of Arkansas turned out on this refuge some bobwhite quail during the first week in March.

Importations.--The season for the importation of quail from Mexico opened on February

16, and shipments have been arriving in comparatively small numbers up to date. The first to enter at Eagle Pass, Tex., arrived on March 11 and contained 120 birds. The total number of quail imported at the three ports--Brownville, Eagle Pass, and Laredo--up to March 14 was 23,020, as compared with 39,541 during the same period last year.

Among the interesting birds imported during the month were 5 argus pheasants from Singapore. A proposed shipment of grassquits and black finches from Cuba intended for San Francisco failed to receive the approval of the State Bureau of Plant Quarantine and Pest Control, as the introduction of such birds into California is opposed by the State authorities.

Superintendent Steele Addresses Meetings.--Superintendent Ray C. Steele, of the Upper Mississippi Wild Life and Fish Refuge, attended meetings of the following organizations during the past few weeks and gave addresses on matters pertaining to the refuge: The Business Men's Club, at La Crosse, Wis., on February 19; the Wild Life Conservation Club, at Clinton, Iowa, on March 10; and the Minnesota Division of the Izaak Walton League, at the Curtiss Hotel, Minneapolis, Minn., on March 12.

Trespasser Settles out of Court.--A corporation engaged in construction work in the vicinity of one of the units of the Upper Mississippi Refuge recently paid to the United States the sum of \$1,000 in a compromise settlement resulting from the cutting of timber on the refuge. The unlawful cutting took place in February, 1930, when employees of this company desiring to procure some piling for their immediate use cut a number of young trees growing near by without considering the fact that the trees were refuge property.

Fire Situation Acute on Upper Mississippi.--The Upper Mississippi Refuge is experiencing this spring the most serious fire hazard since its establishment nearly six years ago. Lack of snowfall during the past winter, the almost total absence of rainfall, low humidity, and an almost unprecedented low stage of water in the river have contributed to make the refuge throughout its length of 300 miles a virtual tinder box. Each day records fires breaking out in various parts of the area, taxing to the utmost the patrol and fire-fighting force and requiring frequent assistance on the part of members of the staff of the Winona office. Thirty-five cooperative fire wardens have been designated at strategic points throughout the refuge, who upon an outbreak of fire in their localities promptly telephone the information to the nearest ranger or the Winona office. These men serve without pay except when actually employed on the fire line, and have rendered valuable assistance.

Upper Mississippi Refuge Cases Reported during February

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Lawrence*	1	Wisconsin	Trapping fur animals on closed area

Bird Reservation Trespass Cases Reported during February

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Roahen, Amundson*	1	Nebraska	Hunting ducks on closed area
Whitehead, Carter*	2	South Carolina	Trapping on closed area

\* U. S. deputy game warden.

Treaty-Act Cases Reported during February

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Voerg*	1	Missouri	Hunting ducks in close season
Birsch, Johnson**	1	North Carolina	Killing a wood duck
Charlton	3	West Virginia	Hunting and killing waterfowl from motor boat
Charlton, Crozier*, Davis*	3	Kentucky	Killing ducks from motor boat
Clarkson	3	Texas	Killing ducks after sunset
"	3	"	Offering for sale and selling ducks
Clarkson, Gearrard**	1	"	Selling ducks; exceeding possession limit on ducks
Creech	1	Illinois	Exceeding possession limit on ducks
"	2	"	Hunting ducks after sunset
Harris*, Jamieson**	1	Arkansas	Killing and possessing ducks in close season
Hoffman, Adams*	9	Alabama	Killing and possessing robins
Holmes, Kelly**, Preston**	2	Maryland	Killing ducks in excess of limit.
Jans*, Peterson*	2	Illinois	Hunting ducks from motor boat
Jans*, Westine*	1	"	Hunting ducks from motor boat
Johnson	1	Louisiana	Killing and possessing waterfowl in close season
"	1	"	Killing and possessing doves in close season
Johnson, Book*, St. Germain*	4	"	Selling ducks
" " "	2	"	Offering ducks for sale
Johnson, Buie**	1	"	Exceeding possession limit on ducks
Johnson, Crow**	2	"	Killing and possessing ducks in close season
Johnson, Foolkes*	1	"	Killing and possessing ducks in close season
Johnson, St. Germain*	2	"	Possessing ducks in close season
" "	1	"	Purchasing ducks; possessing ducks in excess of limit
Merovka	1	Mississippi	Killing ducks in close season
Perry, Huhn*	1	Missouri	Possessing ducks in close season and offering them for sale
Roahen, Tic**	1	Wisconsin	Offering for sale and selling ducks
Salisbury*	1	California	Hunting geese from automobile
Shaver	2	South Dakota	Hunting and killing ducks after sunset
"	1	Iowa	Killing, possessing, and offering for sale a swan
Tonkin, London*, Miner*, Anderson**, Atkinson**	1	California	Killing ducks in excess of limit
Tonkin, Miner*	2	"	Killing ducks in excess of limit
" "	2	"	Possessing ducks in excess of limit
Whitehead	3	South Carolina	Killing and possessing wood ducks
"	19	Georgia	Killing and possessing robins
Woods*	2	Louisiana	Killing and possessing waterfowl in close season

\* U. S. deputy game warden.

\*\* Deputy State game warden.



Treaty-Act Cases Terminated--Reports Received during February

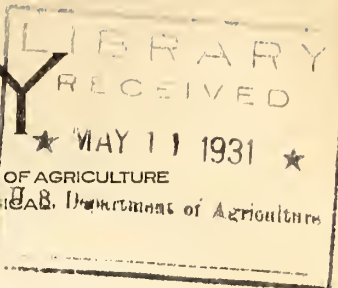
<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Branchaud	1	Dist. Columbia	Possessing ducks in storage in close season	\$140
Charlton, Leggett*, McDough*	1	Michigan	Selling ducks	\$100 and 2 months in jail
Charlton, McDough*	1	Michigan	Selling ducks	\$100 and 1 month in jail
Hall*	1	Minnesota	Killing ducks in close season	\$10
"	1	"	Killing ducks in close season	\$5
Johnson	1	Louisiana	Killing and possessing water- fowl in close season	9 days in jail
"	1	"	Killing and possessing doves in close season	\$15 and costs
Johnson, Buie**	1	"	Possessing ducks in excess of limit	Sentence supended for period of 5 years during good behavior
Johnson, Crow**	2	"	Killing and possessing ducks in close season	\$5 each
Perry, Huhn*	1	Missouri	Possessing and selling ducks in close season	\$65
Shaver, Nordeen*	2	Minnesota	Possessing wood ducks	\$15 each
Tonkin, London*, Miner*	2	California	Killing and possessing ducks in excess of daily limit	\$1 each
Tonkin, London*, Miner* Anderson**, Atkinson**	1	"	Killing ducks in excess of limit	\$1
Tonkin, Miner*	2	"	Killing ducks in excess of limit	\$1 each
" "	2	"	Possessing ducks in excess of limit	\$1 each
Whitehead, Dailey*	2	Georgia	Killing wood ducks	\$5 each
Woods* Davis**	4	Louisiana	Killing ducks during close sea- son	\$5 and costs each
Woods*, Lettsworth**	3	"	Killing ducks during close season	\$5 and costs each
Woods*, Martin**, Martin**	4	"	Hunting ducks in close season	Sentence sus- pended

\* U. S. deputy game warden

\*\* Deputy State game warden.



# THE SURVEY



ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE

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No. 4

## GENERAL NOTES

Izaak Walton League Convention.--The Survey was represented at the annual convention of the Izaak Walton League of America at the Hotel Sherman, Chicago, Ill., April 22-25, by the Chief, Mr. Redington; the Associate Chief, Mr. Henderson; Stanley P. Young, of the Division of Predatory-Animal and Rodent Control; Rudolph Dieffenbach, of the Division of Land Acquisition; Lisle Morrison, of the Bureau's Office of Exhibits; and from the Division of Game and Bird Conservation, by W. R. Dillon, of the Washington office, S. W. Linebaugh, U. S. Game Protector, of Russellville, Ky., and Ray C. Steele, Superintendent of the Upper Mississippi River Wild Life and Fish Refuge. On April 23, Mr. Redington addressed the convention on "Unfavorable Wild-Life Conditions and Some Means of Relief," and at noon of the same day spoke on the same subject over the radio. Messrs. Redington, Henderson, and Young left Chicago at the end of the convention to attend the Denver Conference of Bureau control workers, beginning April 27.

The exhibit prepared by Mr. Morrison and shown at Outdoor America's Sportsmen's Show, at the same time as the convention, consisted of two booths of conservation-education displays showing various game birds, including mounted ducks and grouse, two large mounts of bobcats with captured ruffed grouse, harmful and beneficial species of hawks and owls, with panel drawings showing how to distinguish them, and a large bald eagle. Another unit consisted of a large panel showing a duck rising from its nest in the high grass and a coyote jumping up after it. This part of the exhibit was one of the attractions at the International Fur-Trade Exposition at Leipzig, Germany, last summer. Mr. Morrison also exhibited transparencies showing various methods of recreation in the open.

Survey Furnishes Editor For National Museum.--Paul H. Oehser, assistant editor of the Biological Survey, was transferred to the Smithsonian Institution, effective April 16, 1931, to become editor of the United States National Museum. His work on technical bulletins and on the North American Fauna series, together with nearly six years' training and experience in the Editorial Office of the Biological Survey has well qualified him for his new duties. Mr. Oehser received the A. B. degree from Greenville (Ill.) College in 1925 and has partly completed graduate work leading to the master's degree at the American University. He was appointed on June 25, 1925, in the Survey, immediately on his graduation from college. During his years of service in the Bureau he was well liked by all with whom he came in contact. For the past few years his interest in the personal welfare of members of the Bureau was shown in his services as chairman of the Survey's committee acting with the Department's Welfare Association. Mr. Oehser has the very best wishes of members of the Biological Survey for success and pleasure in the new work he is undertaking in the National Museum.

Howard Zahniser will be transferred from the Division of Publications of the Department of Commerce, effective May 1, to fill the position vacated by Mr. Oehser. Mr. Zahniser also is a graduate of Greenville (Ill.) College, and in June will have completed the classroom requirements for an M. A. degree in English at the George Washington University. He was engaged in newspaper work in Illinois and at Pittsburgh, Pa., and in teaching before his appointment in the Department of Commerce in January, 1930.



Attends Meeting of Forest Council.--J. Paul Miller, junior biologist, stationed at Amherst, Mass., on April 16 attended a meeting of the Northeastern Forest Research Council at Boston.

Expedites Work to Aid Unemployment.--E. J. Cohnan, in charge of the Office of Accounts, has been temporarily detached from his office and is engaged on work in connection with bids for construction work on wild life reservations, authorized by the recent deficiency appropriation act to aid unemployment. In his absence Guy W. Lane is acting in charge of accounts.

Former Survey Man a Supercalculator.--A letter recently received from a former member of the Survey, John R. Harold, advises of his success in the publication of his book on "Supercalculation: Arithmetic Modernized." This is a work on which Mr. Harold, now an expert mathematician, has been engaged for more than 20 years, since before he left the Survey in 1912. While with this Bureau he was connected with the then Division of Game Preservation. His former associates congratulate him on his work. Mr. Harold now resides in San Antonio, Texas.

Survey Aids Department's Ball Team.--Through the interest and cooperation of Allen J. Duvall, of the Division of Biological Investigations, the members of the Biological Survey have contributed \$16 toward the equipment and necessary expenses of the Agricultural Baseball Team in the Departmental League.

Harrison M. Hoyt Marries.--The marriage is announced of Harrison M. Hoyt, formerly of the Administrative Office and later connected with the Denver, Colo., office of the Division of Predatory-Animal and Rodent Control, to Miss Lillian Elizabeth Rohlf, at Milwaukee, Wis., on April 8, 1931. His friends of the Survey wish Mr. Hoyt and his bride much happiness. They will make their home in Chicago.

New Chairman of Welfare Committee.--Albert M. Day, of the Division of Predatory-Animal and Rodent Control, has been named by Mr. Henderson chairman of the Bureau Committee of the Department of Agriculture Welfare Association, to take the place of Paul H. Oehser, who resigned on April 15. The other members of the committee are Mrs. Margaret B. Leonard, of the Division of Game and Bird Conservation, and Miss Elsie Galloway, of the Division of Fur Resources.

Official Publications.--The following official publications of the Bureau were issued in April:

- "Laws and Regulations Relating to Game, Land Fur-bearing Animals, and Birds in Alaska." Alaska Game Commission Circular No. 8, 34 p., 1 folded map. Received April 2.
- "Personnel of the Bureau of Biological Survey." Biological Survey Leaflet Bi-945, revised (multigraphed), 16 p. Received April 6.
- "The Pharmacology of Thallium and Its Use in Rodent Control," by James C. Munch and James Silver. Technical Bulletin No. 238, 28 p. Received April 17.
- "Migratory Bird Treaty--Act Regulations and Text of Federal Laws Relating to Game and Birds" (including amendments of March 17, 1931). Service and Regulatory Announcements, BS-75, 18 p. Received April 18.
- "Information for the Guidance of Field Men and Cooperators of the Bureau of Biological Survey Engaged in the Control of Injurious Rodents and Predatory Animals." Miscellaneous Publication No. 115, 8 p. Received April 24.

Radio Talks.--A radio talk on "Wild Life Matters" was scheduled for Mr. Redington from Chicago, Ill., on April 23, in connection with his attendance at the meeting of the Izaak Walton League of America.

In the "Uncle Sam's Naturalist Series" of the Department on May 8, a talk is scheduled on "Keeping Track of Migratory Birds."

In the Farm and Home Hour Program of May 25, Stanley P. Young, in charge of the Division of Predatory-Animal and Rodent Control, will speak on "The Ten-Year Program of Cooperative Predatory-Animal and Rodent Control." Arrangements are being made for its simultaneous release over the Western Farm and Home Hour Program from San Francisco, Calif.

Wild Life of Greenland Shown in Pictures.--Members of the Survey were given a special showing of motion pictures of the wild life of Greenland, including musk-oxen, Arctic hares, narwhals, and other forms, on April 10, by Harry Whitney, well-known sportsman and explorer. Mr. Whitney took these pictures in connection with a biological and ethnological expedition on the eastern and northeastern coasts of Greenland last year in the general region where the musk-oxen placed by the Biological Survey in Alaska were captured. The exhibition was presented in the Motion Picture Laboratory of the Department.

#### BIOLOGICAL INVESTIGATIONS

Attend Meetings of Conservation Councils.--Doctor Bell, on April 7, attended a meeting of the Conservation Research Council at Albany, N. Y., which has recently been formed by Commissioner Henry Morgenthau, Jr., of the State Department of Conservation. The meeting was called to discuss problems involved in stocking or maintaining game birds and mammals in the State, policies that should be followed with reference to the introduction of game species, and steps that should be taken in developing a State game-refuge program. The principal considerations involved in stocking areas with upland game and maintaining its abundance and conditions essential to the success of native species were fully discussed.

C. M. Aldous, assistant biologist stationed at St. Paul, Minn., recently transferred to the work of studying forest fauna, attended the meetings of the Michigan Conservation Council at Ann Arbor, on March 18, where general conservation measures were discussed. He remained there until March 25 and was afforded opportunity to discuss various subjects connected with his work with members of the Michigan School of Forestry and Conservation and with a number of officials of the university and of the State. He also attended the meeting of the Forest Protection Board at Madison, Wis., and conferred with officials of the State Conservation Department, March 26 to 31.

Group Studies Arizona Forest Wild-Life Conditions.--E. A. Goldman left Washington on April 4 to join representatives of the Forest Service, the Arizona State Game Commission, the University of Arizona, and stockmen's and sportsmen's organizations in a study of game and other wild-life conditions on the various forests in Arizona. The party left Tucson about April 7 and continued the field investigations until the end of the month. Many problems of critical importance have arisen with reference to the relations of wild life to forest production and administration. Effort will be made to formulate sound policies and practices to be followed in future administration of forested and grazing areas in the State. Mr. Goldman left Arizona in time to attend the Denver conference of predatory-animal and rodent control workers.

W. B. Miller Ill at Walla Walla, Wash.--W. B. Miller, assistant range examiner, of Nome, Alaska, on advice of his physician has returned to the States for treatment of and



recuperation from an illness, contracted it is believed as a result of exposure incident to his work on reindeer problems in northern Alaska, and in studying under particularly trying conditions the crossbreeding experiments between reindeer and caribou on Nunivak Island last summer. By virtue of his service in the United States Navy during the World War, Mr. Miller was examined by physicians of the Veterans Bureau at Seattle, and was assigned to its hospital at Walla Walla, Wash. He reports that he is steadily regaining his health as a result of the care received. He and Mrs. Miller traveled by airplane from Nome to Fairbanks, where in conference with L. J. Palmer he completed essential features of his work in Alaska before he left for Seattle.

Bird Migration was the subject of a talk given by Arthur H. Howell, senior biologist, on March 30 before an animal behavior class at George Washington University.

Bands Ducks.--Dr. Oliver L. Austin, Jr., after the departure of the main flocks of ducks on the Potomac River marshes early in March, went to Cape Cod, Mass. and spent the remainder of March and the first few days in April trapping and banding ducks and small birds near North Eastham, Cape Cod. The waterfowl frequenting the marshes at that time were mainly black ducks. Doctor Austin's banding work at the ornithological research laboratory maintained by his father at North Eastham and other bird-migration studies of the Bureau were the subject of an illustrated "write-up" in the magazine section of the New York Herald Tribune for Sunday, April 5, 1931, entitled "How Straight Does the Crow Fly?"

Reports Progress of Expedition to Haiti.--A letter has been received from F. C. Lincoln relating his experiences in Haiti up to April 3. He reports that Doctor Wetmore and he are receiving the best of treatment from officials of the Haitian Government, as well as from private citizens and that he has been able to make many noteworthy observations on species new to him. Both these observers were interested in seeing the many species of North American birds, especially certain warblers, that were passing through the island en route to their breeding grounds in this country. Mr. Lincoln writes that preparations were being made for a trip to Morne La Hotte in the western part of the southern peninsula. The extremely rough and broken condition of the country precludes the use of pack animals, and practically all transportation of camping equipment and supplies must be made by means of native porters.

Buffalo in Alaska Increase.--The herd of 19 buffalo, taken to Alaska in 1928 and liberated near McCarty, now numbers 29 animals, according to the Fairbanks News Miner, in its issue of March 27, 1931. They are reported by a local warden to have passed the winter on the Jarvis Creek flats, and when found by him they were in two herds, several miles apart. They appear to have an abundance of food and to be in good condition. The total number included three animals that were kept for a year or more at the Reindeer Experiment Station before being liberated. There were nine calves, all of which were born in the wild.

#### FOOD HABITS RESEARCH

Missouri Deemed Not Suitable for Extensive Planting of Ringnecks.--Wallace B. Grange, cooperative agent, has returned from Missouri and submitted a report on the suitability of various parts of the State for stocking with ring-necked pheasants. Most of the State does not appear suitable, and experimental plantings only were recommended. Mr. Grange is now with Herbert L. Stoddard in southern Georgia informing himself about methods used in the development of quail preserves.



Preliminary Publication Announcements.--Charles Scribner's Sons, 597 Fifth Avenue, New York City, have announced the publication of the final report on the Cooperative Quail Investigation. The title of the work is "The Bobwhite Quail: Its Habits, Preservation, and Increase." The book runs to about 600 pages, has 64 black and white and 4 color plates, and the price will be \$6.

It is of interest also to note the recent publication of Aldo Leopold's "Report on a Game Survey of the North Central States," a work of nearly 300 pages, which is obtainable from the American Game Association, Investment Building, Washington, D. C., at \$1 a copy.

#### FUR RESOURCES

Notes from Fur Farm.--During the period April 11 to 19, Mr. Ashbrook was in New York City conferring with leaders in the fur industry, and at Saratoga Springs, N. Y., inspecting the progress at the Fur-Animal Experiment Station. Dr. Karl B. Hanson, director of the station, returned to Saratoga Springs on April 6, from the University of Minnesota, at Minneapolis, where he has been doing laboratory work on studies of losses encountered in animals on fur farms.

Twenty-seven foxes were born this spring at the station, and prospects are good for an average whelping season.

Muskrat Experiments in Maryland.--Upon the completion of the construction work at the field station for the study of fur-animal production, with special reference to muskrats, Agent Frank Smith, who is conducting experiments there, procured about 20 pairs of muskrats from near-by marshes and muskrat farms as breeding stock. Both black and brown-pelted stock and different types of pens, nest boxes, and rations are being used in the experiments to determine the most practicable methods of maintaining and raising the animals in captivity.

Director's Family Visiting Washington.--Mrs. John W. Meyer, wife of the director of the U. S. Rabbit Experiment Station, at Fontana, Calif., has remained in Washington this winter. Recently their young son underwent a serious operation for mastoiditis, but is now out of danger and is rapidly returning to health.

Radio Talk on Conservation of Fur Resources.--On April 19, Mr. Ashbrook spoke over the radio on the program of the I. J. Fox hour from Station WMCA, New York. He had met Mr. Fox last summer at the International Fur Trade Exposition, at Leipzig, Germany, and was glad to accept his invitation to present educational information on the conservation of fur resources. He stressed the need for their scientific administration if the production in the wild, supplemented by that on fur farms, is to keep abreast of the demand on the part of consumers and the fur industry. Mr. Fox wrote the next day that this educational feature on the program had resulted in comments showing that it had been well received.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Field Conference Being Held at Denver.--The second triennial field conference of workers in the control of predatory animals and injurious rodents is being held this week at Denver, Colo., the headquarters of Leo L. Laythe, supervisor of Region No. 2; Dorr W. Green,

leader of predatory-animal and rodent control for the Colorado District; and F. E. Garlough, in charge of the Control Methods Research Project. The sessions were opened at 8:30 a.m. on Monday, April 27, by Mr. Redington, and the conference will continue until Saturday May 2. Three years ago the conference was held at Ogden, Utah. The program includes addresses by the governor of Colorado, the mayor of Denver, and local officials of the Federal Government, State conservation departments, national livestock associations, and the Raw Fur Institute, and by Washington members of the Survey. Mr. Redington, Mr. Henderson, Mr. Young, and Mr. Garlough spoke on "Bureau Matters," "Control Operations," "The Ten-Year Program," and "Control Methods Research," respectively; Dr. J. C. Munch, consulting pharmacologist, on "Suitable Economic Poisons"; and W. E. Crouch, assistant head of the Division, on "Administrative Procedure in the Division." On Thursday the following addresses were scheduled: E. A. Goldman and S. P. Locke, of the Division of Biological Investigations, on "Field Investigations;" and C. C. Sperry, of the Division of Food Habits Research, on "Food Habits Investigations." The sessions of Friday and Saturday, May 1 and 2, will be devoted to the reports of committees and discussion and action thereon by the conference. Other members of the conference from Washington were Albert M. Day, formerly of the Wyoming District, and James Silver, supervisor of Region No. 1.

Results of Eastern Field Trip.--During the field trip throughout the Eastern States, mentioned in the March issue of THE SURVEY, Mr. Young and Mr. Crouch had opportunity to look over a new strychnine plant recently put into operation at Nutley, N. J., and to visit an animal trap manufacturing company at Lititz, Pa., and obtain interesting information on the making of steel and other traps used in taking small rodents and larger mammals.

In central Tennessee they visited the camp of Hunter Earl May, who has been working on coyote control. The farmers of this section seemed very appreciative of Mr. May's work in Hickman County, and tentative plans were arranged for him to transfer to Maury County for further control work against coyotes, the depredations of which are reported in that part of the State.

Arrangements were made in Florida for organizing a new rodent-control district, to include that State and Georgia. Headquarters will probably be established, about July 1, at Gainesville, Fla., and it is planned to conduct much of the work in close cooperation with the State Extension Service.

Messrs. Young and Crouch also spent a brief time with G. C. Oderkirk, at Lafayette, Ind., and with Roy Moore, at A. & M. College, Miss., and conferred with cooperators in their districts. In New York they visited E. M. Mills, leader of the New England District, and discussed recent developments on the State-wide rat-control work and other matters.

Reorganization in Washington District.--Leo K. Couch, leader of rodent control in the Washington District, has been placed in charge of both rodent and predatory-animal control work in that district with the resignation of Dr. Glenn R. Bach, effective March 15, 1931. Mr. Couch has been leader of rodent control in Washington since July, 1921. His knowledge of the problems involved and his wide acquaintance in the State well fit him for the increased responsibilities of dual leadership.

In the reorganization Elmer Williams, who has been assistant leader of predatory-animal control in Oregon for more than eleven years, has been transferred to that position in the Washington District, effective March 16, 1931. Fred R. Sankey, who has been hunter for several years, was appointed assistant leader of predatory-animal control in the Oregon District effective March 16 to fill the vacancy created by the transfer of Mr. Williams.



Clarence M. Tucker was appointed agent in the Washington District effective April 1 to work in rat control in cooperation with the Tacoma City Health Department. Miss Sybil Hobart has been appointed clerk-stenographer in O. E. Steph's office at Bozeman, Mont., and in a Bureau of Entomology office there.

Coyote Takes Early Buffalo Calf.—In the current issue of Yellowstone Nature Notes, a bulletin issued by the Superintendent of the Park, is a lurid account from which the following is an extract:

"The coyotes have struck their blow at the 1931 calf crop in Yellowstone National Park and so far their batting average is a thousand. On St. Patrick's Day the stork visited the buffalo herd in the Lamar Valley and a little red calf was observed following its mother. Chief Buffalo Keeper Lacombe lost no time in dubbing the little fellow 'Pat,' and it is doubtful if there has ever before been a St. Patrick's Day baby in the buffalo herd, as this is about a month earlier than the cows usually give birth to their young.

"Pat was a bouncing boy, weighing about 30 pounds, and 'bouncing' he was, for no other word would more accurately describe his maneuvers in trying to stay at his mother's heels. His arrival increased the herd total to 1,192, and he was the nucleus of a calf crop destined to reach about 250, but his stay on earth was short-lived as the coyotes are constantly watching the buffalo and elk herds and it is a problem for the mothers to bring their young through the early life stages. Pat evidently strayed too far from his mother and the rest of the herd, and the story written in the snow which the buffalo keeper and his men interpreted indicated that ten or twelve coyotes were in the pack which cunningly stalked the helpless youngster and feasted upon the fresh meat. The only remains of the catastrophe was some blood and a few buffalo hairs—not even a bone was left as evidence."

Incidents such as this tend to unite game conservationists and stock raisers in the common cause of controlling predatory wasters of valuable wild and domestic animals.

#### LAND ACQUISITION

First Payment Made for Lands under Conservation Act.—Payment has recently been made for 12,820 acres of land for the St. Marks Migratory Bird Refuge in Florida, the first parcel of land approved for purchase by the Migratory Bird Conservation Commission on which title examination has been completed, title passed to the United States, and payment made. Other cases are progressing satisfactorily in the way of title examination, though difficulties in some instances are arising by reason of defects. By the close of the fiscal year, however, other tracts that have been approved by the commission will undoubtedly be paid for.

Mr. Dieffenbach Visits Illinois and Arkansas.—During the sessions of the convention of the Izaak Walton League of America, which he was attending, Mr. Dieffenbach while in Chicago attended to matters connected with the condemnation of a tract in the Upper Mississippi Refuge and later made investigations of engineering problems affecting the development of the Big Lake Refuge, Arkansas.

To Survey Lake Malheur Reservation.—Chester W. Pecore has been assigned to the cadastral and topographic survey of Lake Malheur Reservation, Oreg., where many intricate problems of an engineering nature have arisen. Mr. Pecore is well qualified to conduct this work by reason of his experience in handling similar problems over a long period in the General Land Office. He is being assisted on the field work by Senior Transitman Harold F. West, and another assistant will be shortly detailed to this work.



A. A. Riemer was detailed during the month to Lake Malheur Resservation in consultation with representatives of the Solicitor's Office and representatives of the Department of Justice to formulate plans for the coordination of the several jobs under the Malheur project. En route to Washington he stopped in Nebraska to consult with Armand F. Allard about the organization and conduct of his work.

Survey Work under Emergency Measures.--Armand F. Allard has completed the survey and staking of the Niobrara Reservation, Nebr., preliminary to the fencing of the area. He has also completed a detailed engineering study of the fence crossing on the Niobrara River. Mr. Allard is now engaged on the survey and posting of the boundary of the North Platte Refuge. It is expected that this will be completed before the end of April, and he will then proceed to the Belle Fourche Refuge.

Albert Smith, Jr., with his crew of four engineering parties, is making satisfactory progress under difficult conditions in locating and marking the boundaries of the Rio Grande Refuge, N. Mex. Considerable difficulty has been experienced here by reason of early Spanish grants and the absence of corner markings on the boundary or in proximity to it.

Progress of Appraisal Parties.--The field party under the direction of Rudolph O. Gustafson has completed its assignment in Texas and is now engaged in the examination of areas in Louisiana. George D. Chittick's party has completed work in Mississippi and is also now working in Louisiana. Because of heavy snows in Idaho and Montana, Albert J. Rissman's party was forced to forego work in those States during April and to proceed to Washington State, where the members are now engaged in examining proposed refuge areas. Carey H. Bennett's party also is working in Washington.

Survey work on the Cape Romain Migratory Bird Refuge in South Carolina will be completed within a few days and Mr. Cook will proceed to Washington with Messrs. Kern and Reacroft to complete related office work.

David D. Pugh, who has been working with Mr. Cook, is now engaged in the survey of Blackbeard Island, Ga., and when this is completed he will go to Florida to survey and mark the boundaries of the St. Marks Refuge.

Daniel H. Janzen has been on a special detail cooperating with the Bureau of Public Health in the appraisal of a 1,200 acre tract of land in Texas being considered for use for hospital purposes.

#### GAME AND BIRD CONSERVATION

Visits Charleston, S. C., on Migratory Bird Matters.--F. G. Grimes, administrative assistant of the Washington office, visited Charleston, S. C., on March 30 to interview representatives of the State Game Department in connection with the enforcement of the Migratory Bird Treaty Act.

Shipments of Big-Game Animals.--Two elk from the herd at the National Bison Range, Mont., and a young buffalo cow from the herd at Wind Cave Game Preserve, S. Dak., have been shipped to the city zoo at Mankato, Minn.; a pair of buffalo have been shipped to the city zoo at Marshfield, Wis., the bull from Sullys Hill Preserve, N. Dak., and the cow from Wind Cave Preserve; another cow buffalo has recently been shipped to the city zoo at Lincoln, Nebr.

Fire Hazard on Upper Mississippi Continues Unabated.--A most acute fire situation is continuing unabated on the Upper Mississippi River Wild Life Refuge and promises to grow more and more serious until the present highly inflammable character of bottom-land cover has

been reduced by rainfall and the reappearance of green vegetation. Members of the staff of the Winona office as well as rangers have at times been on duty continuously for 24 hours or longer in an effort to control devastating fires, which have broken out in various sections along the 300 mile extent of the refuge. Steps are being taken to augment the present fire fighting equipment by the immediate purchase of a high-speed fire boat, a 1-1/2-ton motor truck equipped with power pumper and lines of hose, and an additional supply of hand pumps. Increases are also being made in the number of cooperative fire wardens who are located at strategic points throughout the refuge and whose duty it is to report immediately by telephone or telegraph outbreaks of fire in their localities.

Upper Mississippi Refuge Notes.--Superintendent Ray C. Steele, of the Upper Mississippi Refuge, accompanied by Junior Forester Howard A. Miller, attended a meeting of the Regional Forest Protection Board, at Milwaukee, Wis., on March 31.

Employees of the Winona office and their families, recently enjoyed a party and dinner at the Hotel Winona.

During the past month 19 cases of infractions of the game laws were filed in the State court by rangers on the Upper Mississippi Refuge. Of this number 13 involved illegal trapping, 5 illegal fishing, and 1 the taking of waterfowl. Evidence in these cases was obtained by Rangers Hall, Lawrence, Berni, and Frerichs, Junior Forester Miller, and U. S. Game Protector Shaver. Twelve of the cases have been successfully terminated in the State court, resulting in 5 jail sentences of 60 days each, 1 jail sentence of 40 days, and 5 fines of \$50 each plus costs, aggregating 26.58. Five cases are pending disposition in State court. Two offenders who were apprehended by Rangers Lawrence and Hall for trapping on a closed area of the Refuge near Harpers Ferry, Iowa, were arraigned before a U. S. Commissioner at Dubuque, Iowa, on April 11, and upon failure to furnish the required bond were committed to jail pending trial at the next session of the Federal court.

Jail Sentence for Night Duck Hunting.--In Federal court at Elizabeth City, N. C., on March 23, 1931, two persons charged with hunting wild ducks at night in the vicinity of Knotts Island were found guilty by a jury. The court sentenced each to serve 30 days in jail.

Heavy Fines for Exceeding Limits on Ducks.--Charged with killing wild ducks in excess of the daily limit and with possessing more than 30 wild ducks at one time, two gunners were arraigned in Federal court at Baltimore, Md., on April 7, where they entered pleas of not guilty. After hearing the arguments, however, the court adjudged them guilty and fined one \$150 and the other \$50, in addition to costs. The evidence was obtained by United States Game Protector John Q. Holmes and Deputy Game Wardens W. R. Preston and Charles Kelly.

Importations of quail from Mexico have fallen off considerably this year in comparison with previous seasons; notwithstanding the fact that the Mexican Government has granted concessions for the export of 260,000 birds. The total number of quail entered at the three ports of Brownsville, Laredo, and Eagle Pass up to April 4 was only 35,165 while the number for a like period last year was more than 60,000. The first permit for eggs this year was issued on March 10, for the entry of 500 pheasant eggs from England.

The raising of the embargo on the entry of parrots last October did not promote much activity in the importation of these birds, and thus far permits have been issued for only about 300. This is probably due in part to the necessity, under the regulations of the Public Health Service, of quarantining the birds for a period of 15 days on Hoffman Island, N. Y., and Angel Island, near San Francisco.

Treaty-Act Cases Terminated--Reports Received during March

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Charlton, Crozier*, Davis*	3	Kentucky	Killing ducks from a motor boat	\$50 each
Gieseler*	1	Illinois	Possessing a wood duck	\$5
"	1	"	Killing and possessing killdeer	\$10
"	1	"	Killing and possessing a yellowlegs	\$10
Holmes, Kelley**, Preston**	1	Maryland	Killing ducks in excess of daily limit	\$150 and costs
Holmes, Kelly**, Preston**	1	"	Killing ducks in excess of daily limit	\$50 and costs
Jans*	2	Illinois	Killing and possessing meadow- larks	\$25 each
"	1	"	Possessing meadowlarks	\$20
"	1	"	Killing and possessing yellow- legs	\$20
"	1	"	Killing rails in close season	\$25
"	1	"	Killing and possessing wood ducks	\$10
"	1	"	Killing and possessing a robin	\$25
"	1	"	Killing and possessing a robin	\$50
Jans*, Peterson*	2	"	Hunting coots from a motor boat	\$5 each
Jans*, Westine*	1	"	Hunting and possessing a robin	\$25
Johnson	1	Louisiana	Hunting ducks prior to half an hour before sunrise	\$10 and costs of \$20.10
Johnson, Barbo*	1	"	Killing ducks in excess of daily limit	\$50
" "	1	"	Killing ducks in excess of daily limit	\$10
Johnson, Book*, St. Germain*	2	"	Offering ducks for sale	Sentence suspend- ed for period of 5 years each
Johnson, Doucet*	1	"	Killing mourning doves in close season	\$5
Johnson, St. Germain*	1	"	Purchasing waterfowl; possess- ing ducks in excess of daily limit	Sentence suspend- ed for 5 years
Lewark*	2	North Carolina	Killing coots from a motor boat	\$25 and costs each
Perry, Concannon*	1	Kansas	Killing ducks after sunset	\$25
Perry, Lawhorn*	1	"	Killing and possessing robins	\$25
Roahen, Hahn**	3	Illinois	Hunting ducks in close season	\$25 each
Scholler*, Jans*	1	"	Hunting and possessing a thrush	\$25
Scholler*, Peterson*	1	"	Killing coots from a motor boat	\$10
Shaver	2	Minnesota	Hunting ducks in close season	\$25 each
Steele	1	Maryland	Selling ducks	Placed on proba- tion for one year.

\* U. S. Deputy game warden.

\*\* Deputy State game warden.



Treaty-Act Cases Reported During March

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	2	Missouri	Killing swans
"	1	"	Killing ducks in close season
Clarkson, Johnson	1	Texas	Selling ducks
Creech	5	Iowa	Possessing ducks in storage in close season
"	1	Illinois	Possessing ducks in storage in close season
"	1	"	Killing ducks from a motor boat
Gordon*	2	Louisiana	Killing ducks from a motor boat
Hoffman	2	Alabama	Killing nighthawks
Hoffman, Davis**	1	"	Pursuing migratory waterfowl with a motor boat
Johnson	1	Louisiana	Hunting ducks prior to half an hour before sun
Johnson, Barbe*	2	"	Killing ducks in excess of daily bag limit
Johnson, Doucet*	1	"	Killing mourning doves in close season
Kidd*	1	Virginia	Offering to sell a goose
Merovka	1	Arkansas	Hunting ducks in close season
Merovka, Cummings*	1	"	Offering for sale and selling ducks
Merovka, Riddick,	2	Tennessee	Hunting coots from a motor boat
Dickerson* Perry, Huhn*	1	Colorado	Killing geese from an airplane
Riddick, Merovka,	3	Arkansas	Hunting ducks after sunset
McGregor*			
Whitehead	4	Georgia	Killing robins
"	13	"	Killing and possessing robins
Whitehead, Dailey*	4	"	Killing wood ducks

Bird Reservation Trespass Cases Reported during March

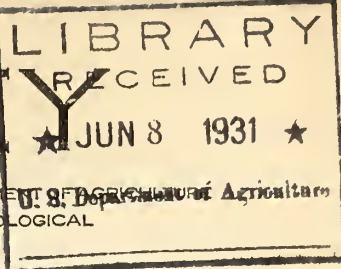
<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Crossley*	1	Arkansas	Killing a duck on a closed area

\* U. S. deputy game warden

\*\* Deputy State game warden



# THE SURVEY



ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U.S. DEPARTMENT OF AGRICULTURE  
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No. 5

## GENERAL NOTES

Bureau Represented at Mammalogists' Meeting.--At the Thirteenth Annual Stated Meeting of the American Society of Mammalogists, held at the Academy of Natural Sciences, Philadelphia, May 12-15, the Biological Survey was represented by the Chief, Mr. Redington, the Associate Chief, Mr. Henderson, and the following members of the staff: Dr. T. S. Palmer, Dr. W. B. Bell, Edward A. Preble, Edward A. Goldman, Vernon Bailey, Arthur H. Howell, Dr. H. H. T. Jackson, and Mrs. Viola S. Snyder. About 50 other members of the Society were registered at the meeting. Dr. Bell presented a paper on "Experiments in reestablishing musk-oxen in Alaska," and Mr. Bailey one on "Animal life of the Mississippi Wild Life Refuge"; both were illustrated with slides.

The report of the Society's special committee on problems of predatory mammal control, which criticised control operations of the Biological Survey, was adopted, though the objectives of the Survey and the safeguarding methods employed, as evidenced by the reports of the special field investigators, were explained to those present by members of the Bureau.

Doctor Palmer withdrew his name from consideration for election as president, and Dr. M. W. Lyon, jr., was elected. Mr. Preble was retained as chairman of the editorial board of the Journal of Mammalogy, and with Doctor Jackson continues as a member of the Board of Directors, and Mrs. Snyder was reelected Treasurer.

Officials Returning from Denver Confer with Cooperators.--Following the conference of field workers of the Division of Predatory Animal and Rodent Control, Mr. Redington left Denver on May 5 and after visiting projects in southern Colorado went to Philadelphia, Pa., for the meeting of the American Society of Mammalogists. From Philadelphia he returned to Washington. Mr. Henderson left Denver on May 3 and returned to Washington by way of St. Paul and Minneapolis, where he conferred with several cooperators of the Bureau. Mr. Young returned to Washington direct from Denver.

Official Publication.--The following was published on May 8 by Charles Scribner's Sons, 597 Fifth Avenue, New York, N. Y., for the Committee Representing the Quail Study Fund for southern Georgia and northern Florida, in cooperation with the Bureau of Biological Survey:

"The Bobwhite Quail: Its Habits, Preservation, and Increase," by Herbert L. Stoddard, cooperative agent, Division of Food Habits Research. xxix + 559 pages, 69 plates (including 5 in color--4 by E. R. Kalmbach of the Division of Food Habits Research), and 32 text figures. Received May 8.

Among the collaborators on other chapters were C. O. Handley, formerly of the Bureau; Clarence Cottam, of Food Habits Research; W. B. Coleman, formerly of the Virginia State Game Farm; and Dr. E. B. Cram, Miss Myrna F. Jones, and Miss Ena B. Allen, of the Bureau of Animal Industry. The book is a report on investigations directed by Mr. Stoddard from March, 1924, to June, 1929.



A radio talk on "The Predatory-Animal Control Program" is scheduled in the "Uncle Sam's Naturalist Series" of the Department for June 5.

Fills New Position in Business Administration Office.--Miss Pauline M. Brett, transferred from the Office of the Secretary to fill a new position as clerk-stenographer in the Business Administration Office, assumed her duties May 4. For several months Miss Brett has been on detail with the President's Emergency Committee for Employment.

Returns to Bureau after 12 Years.--Miss Ferry E. Paulson was reinstated in the Department on May 5 to fill a new position as clerk-typist in the bookkeeping section of the Accounts Office. Miss Paulson was with the Bureau for a few weeks under temporary appointment in the fall of 1918.

### BIOLOGICAL INVESTIGATIONS

Tells of Haitian Experiences.--A letter written under date of May 3 by F. C. Lincoln gives a resume of his work with Doctor Wetmore in Haiti during April. This period was spent mainly on a trip to Pic de Macaya in the Mornes de la Hotte. Here no previous ornithological work had been done. Besides making the acquaintance of many birds unknown to them, the visiting naturalists were able to get numerous notes on the spring migration of several North American warblers. "These birds," wrote Mr. Lincoln, "were common or plentiful, and I believe that I have some departure dates that will fill important gaps in our files. Data of this kind have been sadly lacking."

Of two ascents of the peak made from their camp at an altitude of 4,200 feet, Mr. Lincoln reported that so far as they knew only one other white man (the late Dr. Eric L. Ekman, the botanist) had preceded them, and they did not know whether he had gone to the top. Their trip in this region was of great interest also because of the native species of birds seen and of the lianas, tree ferns, trogons, and other objects of natural interest, "a fascinating sight when viewed for the first time."

After returning to the coast by pack train, over trails that in this country would be considered impassible, the party crossed to Ile a Vache, where they spent three days in intensive work.

Mr. Lincoln is greatly interested in the natives, whom he describes as courteous and friendly, frequently discommoding themselves to give the visitors shelter. Altogether he reports the trip as intensely interesting and as yielding valuable results.

When Mr. Lincoln wrote, plans were being made to visit Beata Island, off the southwest coast of the Dominican Republic. Doctor Wetmore and Mr. Lincoln were expecting to arrive in New York about June 1.

Makes Survey of New York Game Refuges.--Vernon Bailey returned early in May from a two weeks' survey of the principal game refuges in New York State, made at the request of the State Conservation Department at Albany. The object of the investigation was to determine facts regarding each refuge, particularly the kinds of game mammals and birds to be protected and encouraged there. While the limited time allowed only a very rapid reconnaissance, the trip afforded an excellent idea of game conditions in New York and indicated a promising outlook for the future if the plans of the Commission can be carried through. Moderate-sized refuges are being established, and each is to be inclosed with one heavy smooth wire to mark its boundary, and marked with notices prohibiting hunting or fishing. Mr. Bailey was accompanied on his tour of the areas by the State superintendent of grouse control, and the superintendent of State game refuges.

Visits Idaho Wintering Resort for Mule Deer.--S. B. Locke, during the last 10 days of March, accompanied a party of Forest Service officers on a pack trip in the region of the Middle Fork of Salmon River, Idaho. This section is of interest as being an important wintering resort for mule deer. A count of deer was made each day, and from 150 to 250 were usually noted. Some evidence of disease was found, but the animals seemed to be little molested by predators. Mountain goats and mountain sheep are also found in the region, and more careful studies of them are planned.

Studies Ducks in Maryland Marshes.--O. L. Austin, jr., is investigating the status of breeding ducks in the marshes about Cambridge, Md. In a letter written May 8 he reports black ducks with young broods; but he had as yet found no nests or broods of blue-winged teal, although the birds were fairly common and paired. He reports that the region affords great possibilities for banding ducks in the fall.

#### FOOD HABITS RESEARCH

Jasper Beauregard White, of Waterlily, N. C., long a collaborator of the Biological Survey, died at his home on Church Island, N. C., on May 17, 1931, in his sixty-eighth year, after an illness of only a few days. From his early youth on the shore of Currituck Sound, he followed wild fowling. He was a market gunner and a commission merchant, and in his later years furnished board, lodging, and guides for hunters. Beginning in 1909, he assisted in getting the Survey's studies of wild-duck foods under way, especially in the Currituck Region where he collected many of the birds used. With advance in this research, there grew up a business of dealing in plants for the improvement of wild-fowl feeding grounds, an industry in which he played an important part from the first. An expert shot through all his prime, he had developed to a marvellous degree the old gunners' amazing faculty of identifying flying fowl so distant that to the ordinary observer they seem mere moving specks. He was also a close observer of wild life and took more than the usual gunner's interest in it, not for the shooting season only but the year round. For many years he contributed to Forest and Stream articles signed "That Reminds Me" and "More Anon." Mr. White was a born raconteur and an interesting conversationalist. Despite much ill health in later years, he retained his thorough good nature. He was a worthwhile, dependable friend. -- W. L. M.

Studies Made in Quail Country.--Late in April and early in May, Wallace B. Grange with Herbert L. Stoddard visited several types of quail country in South Carolina, Georgia, Florida, and Mississippi. Part of these inspections had reference to quail-demonstration projects being organized, several of which it is hoped will be in full operation within a year. Mr. Grange is now in the Middle West cooperating with the Game Institute Fellows.

Plans Being Made for Western Laboratory.--Charles C. Sperry, besides attending the Denver conference of workers in predatory-animal and rodent control, devoted some time to finding a suitable site in Denver for a western laboratory of the Food Habits Research Division. Later he visited Lawrence, Kans., to arrange for cooperation in building up reference collections needed in the study of the food habits of predatory animals.

Meets with California Bird Club.--Johnson A. Neff attended the meeting of the Cooper Ornithological Club at Berkeley, Calif., May 15-16.

## FUR RESOURCES

Addresses Members of Fur Association.--Mr. Ashbrook addressed members of the United Fur Manufacturers' Association at the hall of the Kastorian Society "Omonoia" in New York City on April 18, on the conservation and propagation of fur animals. Motion pictures were shown depicting the wild and breeding-pen life of fur animals. The successive stages of trapping, dressing, and manufacturing into coats were also pictured.

Karakul Sheep Skins Appraised.--On May 4-5 Mr. Ashbrook and Carl G. Potts, of the Bureau of Animal Industry, in connection with the cooperative work between the two bureaus, visited raw-fur receiving houses that specialize in karakul-sheep skins to obtain first-hand information on the various grades and the prices being paid. They took with them a small quantity of karakul-sheep skins produced at the Experiment Station at Beltsville, Md., as well as some produced on a private farm for appraisal and comparison with skins imported from Europe.

Visitor from Formosa.--Mr. Ashbrook's brother, Samuel F. Ashbrook, has returned to the United States after spending 11 years in the Orient, the last six in Formosa, where he is professor of English in the University of Tiawan. Since his return to this country he has lectured on the Orient in various cities throughout the East.

Detailed to California.--Miss Jozy Dell Hall, stenographer in the Washington office of this Division, has been temporarily detailed to assist in the work at the Rabbit Experiment Station in California. She left for Fontana on May 20. Her work in Washington will be cared for by Mrs. Caroline F. Britton, who has been appointed temporarily as stenographer-typist.

Emergency Construction Work at Saratoga Springs Progresses.--Dr. Karl C. Hanson reports that the extension of the office building at the Fur Animal Experiment Station in New York is about completed and that the cold-storage plant will be finished within a few weeks. During Mr. Ashbrook's visit to the station, plans were made for constructing new marten pens.

Visitor from Alaska at Fur Farm.---Chas. H. Flory, Commissioner for the Department of Agriculture for Alaska, visited the Fur-Animal Experiment Station, on April 23. He conferred with Doctor Hanson regarding the experimental work and inspected the entire layout in connection with the proposed plan for establishing a similar station in Alaska.

More Martens Born in Captivity.--Two litters of martens were born at the Fur-Animal Experiment Station during the last week in April. The number in the litter is not yet known, because great care is always taken not to disturb the mother until the young are a few weeks sold.

Emergency Work at Fontana.---John W. Meyer, in charge of the Rabbit Experiment Station at Fontana, Calif., reports that the construction work under the emergency appropriation is nearing completion. The rabbit hutches, septic tank, and tool shed will be finished probably by the first week in June.

Rabbit Show Exhibit.--During April Mr. Meyer arranged a special exhibit at the San Diego Exposition stressing the materials needed for properly raising rabbits. Boys of the 4-H Cloverleaf Rabbit Club entered rabbits in the show.



## DISEASE INVESTIGATIONS

Disease Investigations Office in Operation.--Doctor Shillinger, in charge of the organization handling disease investigations of wild life, now has his offices in Temporary Building "C." The space available for laboratory work is being equipped for post-mortem investigations. Mrs. Marion H. Reeves, formerly of the Bureau of Agricultural Economics, has been appointed in charge of the office work.

Game-Bird Studies.--Dr. F. D. McKenney, a veterinarian, has been employed to investigate the diseases of upland game birds. The owner of a large quail-breeding farm at Richmond, Va., has made equipment and funds available to further the study. Many game farmers successful in propagation experiments find that disease is a limiting factor in controlled game-bird production, and numerous requests have come to the Bureau for undertaking studies of this nature.

Death of Swans Thought Due to Poison.--An unfortunate loss among whistling swans on the Coeur d'Alene River near Harrison, Idaho, has occurred during the past month. A large portion, if not all, of the birds that had settled on the river and adjoining sloughs, have died. Specimens collected by United States Game Protector Ransom and local citizens were sent to the Bureau laboratory in Washington and to other institutions for necropsy. Preliminary examinations indicate that the birds died from some form of poisoning rather than infection. The river is reported as polluted by mine and smelter waste, and chemical analysis may show pollution to be the cause of the loss.

Investigate Fox-Disease Outbreaks.--Reports of disease outbreaks on fox ranches have been investigated during the past month by Dr. R. G. Green in Iowa, by Dr. Karl B. Hanson in New York, and by Doctor Shillinger in Virginia. On the ranches in Iowa Doctor Green found symptoms not typical of any well-known disease of these animals. The conditions are being investigated further, and a disease not heretofore recognized among foxes may be found. On the large fox ranch in Virginia visited by Doctor Shillinger losses were occurring among young as well as adult foxes. An attempt is being made to determine whether the animals are affected with epizootic fox encephalitis or dog distemper. Clinical examination did not definitely identify either of these diseases.

Witness for Food and Drug Administration.--Doctor Shillinger was in New Orleans, La., the week of May 18 to give expert testimony at court trials in which the Food and Drug Administration was interested.

## PREDATORY-ANIMAL AND RODENT CONTROL

Denver Conference.--The triennial field conference of leaders and assistants of the Division of Predatory-Animal and Rodent Control, held at the Brown-Palace Hotel, Denver, Colo., from April 27 to May 2, was highly successful and will result in still better coordination of field control activities.

In the lobby of the hotel a large shield reading "Welcome, United States Biological Survey Conference, April 27-May 2" was hung. The field men met leading members of the National Raw-Fur Institute, and as a result there was brought about a better understanding of the Bureau's policies and methods in control operations. These had been but vaguely understood by members of the raw-fur industry.

The conference closed with a banquet, on May 2, Ira N. Gabrielson, supervisor of Region No. 3, acting as toastmaster. Talks were made by Mr. Henderson, Dr. J. C. Munch, James Silver, F. E. Garlough, and C. G. Poole. The entertainment features included a bur-

lesque by B. E. Foster, of the Arizona district, and D. D. Green, of the Colorado district, on the proposed new badge and service uniform for field men of the Bureau. The banquet ended with short talks by Mr. Young and Mr. Redington.

To Investigate Reported Bear Depredations.--A Wyoming rancher reports that the loss of 35 calves and grown cattle on his allotment on the Shoshone National Forest last year was probably caused by bears. An investigation will be made by Adolph S. Hamm, leader of the Wyoming district, and by a station chemist of the University of Wyoming and others interested, to determine whether poisonous weeds or bears, or both, were responsible for the losses.

Cooperation in Colorado Increases.--D. D. Green, leader of the Colorado district, reports that in spite of the financial depression, cooperative funds for prairie-dog control amounting to \$23,700 have been made available in eleven counties of Colorado, as well as in the Rio Grande, Cochetopa, and San Isabel National Forests.

Melanism in Prairie Dogs in Colorado.--A pure black prairie dog was brought into the office of D. D. Green, leader of the Colorado district, by a rancher from near Paradox, who said that during the spring of 1930 one black prairie dog had been noticed on the ranch and later it had a litter of five or six young, all entirely black. The melano brought into the office was from this litter.

Cooperative Rat Control Work in Texas.--L. C. Whitehead, leader of rodent control in the Texas district, reports that Don A. Spencer of his district has made arrangements with the secretary of the Hotel Men's Association of Houston, Tex., to supervise rat and mouse control in all the hotels of Houston. The hotel management is to select one employee to carry on control methods. Mr. Spencer will train him in the use of traps, food poisons, poisonous gases, and rat-proofing principles and will make a quarterly inspection of the work.

Poison Gas Gets Prolific Texas Rats.--Mr. Whitehead has also sent the following item reported by Mr. Spencer: At the Central Prison Farm, at Sugarland, Tex., poison gas was applied to a number of rat burrows beneath one of the large dog kennels. No rats escaped, and the steward remarked that the control men were not doing any good. So after 5 minutes exposure Spencer and one other man opened several of the burrows with their hands and threw out 15 large and fully matured rats. Of this number only 2 were males; 9 of the 13 females contained 12, 11, 5, 10, 10, 6, 9, 10, and 10 embryos, respectively--making a total of 98 rats.

Pocket Gophers Destroy Pecan Trees in Texas.--Mr. Whitehead also reports the following from Gilmer, Tex.: Of 70 pecan trees set out in the fall and winter of 1929, about half were cut by pocket gophers the first year, and the remainder in the second year. Only about 10 per cent died from natural causes, the other 90 per cent being cut by pocket gophers. The writer states, "Through a demonstration by A. E. Oman, I have just learned how easy it is to destroy these 'pests', and I am working to clean out my entire premises of them."

Rats and Pigs in South Dakota.--Louis Knowles, leader of predatory-animal and rodent control in South Dakota, recently made an investigation in response to a letter urgently requesting a formula for ridding farm buildings of rats. The owner of the farm reported losses of 600 chickens in 1929 and 400 in 1930. A litter of pigs had been killed by rats, and it was found necessary to guard other young litters. A guard was kept one night until about 3 a. m.; on returning at 6 a. m. he found 5 of a litter of 8 pigs under the floor of the hog house where rats had dragged them. Instructions as to control were given.



Arizona Hunter Knifes Lion after Hand-to-Claw Combat.—Ben E. Foster, leader of predatory-animal and rodent control in the Arizona district, reports a recent close and almost fatal struggle by Gene Holder, a hunter on the Elk Range in Arizona. Holder's dogs had treed a large mountain lion, so situated that he thought it would slide over the rim after being shot, thus making recovery of the skin impossible. He therefore placed himself between the treed lion and the canyon rim so as to check the body when it fell. As he pressed the trigger his foot slipped on the snow, the bullet failed to hit a vital spot, and the wounded animal fell almost upon him. Before it could be subdued with a hunting knife, Holder was severely bitten and scratched. It took him 3 days to get out on horseback to Flagstaff, Ariz., where he was treated by a physician for over a hundred wounds.

On his return to the Elk Range he found the body of a deer hunter who had been lost early last fall. National guardsmen and private citizens had searched for him for weeks over the same country in which he was found by Holder. The trained dogs bayed the body of the unfortunate man in much the same manner that they might have bayed a treed lion.

Pocket-Gopher Costly in Idaho.—Irrigation companies operating in pocket-gopher infested areas in Idaho are spending upwards of 10 per cent of maintenance and operation funds for controlling pocket gophers on the ditch right of ways and adjacent areas, according to reports from T. B. Murray, leader of rodent control for the Idaho district.

Results of Cooperative Control Work in Alaska.—The annual report of the Commissioner for the Department of Agriculture for Alaska to the Secretary of Agriculture makes the following comment:

"It is estimated that over 2,000 trappers have been personally contacted to date by the leader [Harlan H. Gubser] and his assistants. The interest they have shown is evidenced by the material increase in the number of coyotes and wolves taken and by the numerous inquiries received for scent materials and the kind of trap to use for special methods of trap setting.

"In 1925-26, before cooperative work was undertaken between the Territory and the Department, the number of wolves and coyotes offered for bounty was 1,111. After trapping demonstrations were held and scent formulas given in 1927-28, the number increased to 2,161, and up to December 31 for the years 1929-30 there have been 2,022 presented for bounty, an increase of over 88 per cent as a direct result of cooperation with the trappers."

Depredations on Lambs in Arizona.—Ben E. Foster, leader of predatory-animal and rodent control in the Arizona district, estimates that during the past few months more than 500 coyotes have been taken by Federal and private trappers at Congress Junction, on the principal line of the Santa Fe Railroad between Phoenix and Ashfork. In this comparatively small and desert district, used as a lambing ground in early spring, more than 1,500 losses from coyotes were reported during lambing season last year. This year by working early in a systematic manner with hunters the losses in lambing probably will be reduced to between 150 and 200.

Rodent Control Work on Flying Field Praised.—The following is the substance of a letter from the Commandant of Mather Flying Field, addressed to the California Rodent Control Office: For several years the pocket gophers and ground squirrels have caused considerable damage to the flying field. The holes dug by these animals constituted a constant hazard to landing. The splendid work of your Department during the period April 3 to 22 has met with excellent results, and this hazard is largely removed. The excellent cooperation of your Department with military authorities is greatly appreciated as is the unusual work of the Hupe brothers. They were on the flying field from daylight until darkness every day and made no complaints or demands but quietly went about their business in a most efficient and praiseworthy manner. It is suggested that your office inform these gentlemen of the high regard in which we hold them.



On Extended Field Trip.--Since the Denver conference W. E. Crouch and A. M. Day have continued on an inspection tour of some of the western districts. Mr. Crouch's itinerary will take him into Wyoming, Idaho, Oregon, Washington, Montana, Wisconsin, and Michigan before his return to Washington, D. C. Mr. Day will go into Wyoming, New Mexico, Arizona, Texas, Oklahoma, and Arkansas.

Broadcast Talk on Control Program.--The radio talk on "A National Program of Predatory-Animal and Rodent Control" delivered by Mr. Young from Station WRC in Washington on May 25, was repeated by E. E. Horn, district investigator, in the Western Farm and Home Hour program on May 28, through Station KGO in Oakland, Calif., and seven associated stations.

## LAND ACQUISITION

Examine Okefenokee Swamp.--Rudolph O. Gustafson and Peter J. Van Huizen, junior foresters, are engaged on an examination of the Okefenokee Swamp, which some months ago was inspected by the Senate Committee on Wild Life Conservation. This area in its entirety comprises about 700 square miles in southeastern Georgia. The region, though not considered of outstanding importance as a migratory-bird conservation refuge, is deemed to be well suited as a refuge for many other forms of wild life.

Finish Survey of Cape Romain Refuge.--Assistant Cadastral Engineer Charles S. Cook and Transitman Kenneth C. Kern have returned to Washington after completing the survey of the Cape Romain Refuge in South Carolina. Computations of acreages of the numerous islands going to make up this refuge are now being made in the Washington office, and an accurate map is being prepared.

Locating Boundaries of St. Marks Refuge.--Transitman David D. Pugh is on detail to the St. Marks Migratory Bird Refuge in Florida, where he is making an accurate location of the exterior boundaries of the lands purchased. The boundaries will be permanently monumented and the area conspicuously posted as a wild-life refuge.

Engineering Studies at Big Lake Refuge.--A. A. Riemer has been on a short detail to Big Lake Refuge in northeastern Arkansas supervising engineering studies incident to the clearing of a channel to permit a greater flow of water into the wild-life sanctuary.

Consider Acquisitions in Upper Mississippi, New York, and New Jersey.--In Chicago during the week of April 20, Mr. Dieffenbach conferred with Ray C. Steele, superintendent of the Upper Mississippi River Wild Life Refuge, and Harold W. Hicks, assistant land valuation engineer, in connection with acquisition problems on the Upper Mississippi refuge. During the week of May 18 Mr. Dieffenbach was in New York City and on Long Island to negotiate for the acquisition of a proposed refuge site on Long Island. He also inspected several proposed sites in New Jersey.

Returns from Investigations in West.--Robert M. Rutherford, associate land valuation engineer, has recently returned from an extended trip of investigation and negotiations in North Dakota, Wyoming, California, and Nevada.

Survey Wins Suit for Upper Mississippi Land.--The Biological Survey during the latter part of April successfully completed a contested suit in condemnation of 695 acres of land within the Upper Mississippi River Wild Life and Fish Refuge. Opposition had been raised by a group of owners to the inclusion of the lands in the refuge, and there had been several legal delays in closing the case.

Progress Made in Establishing Refuge Boundaries.--Steady progress is being made in the survey and accurate location of the boundaries of the numerous refuges administered by the Bureau in the West, work on which was authorized by the emergency relief legislation. Permanent boundaries are being established, and surveyors are setting up substantial boundary posts so that all exterior limits will be conspicuously marked. The Biological Survey is now supplied with bronze tablets that will be set in concrete posts at the corners and along the lines of the refuges, so that landmarks will be definitely and permanently established.

Make Aerial Survey of Lake Malheur Reservation.--The cadastral and topographic surveys of the Lake Malheur Bird Refuge being conducted by Cadastral Engineer Chester W. Pecore, assisted by Transitmen Harold F. West and Oswald E. Recroft, are being supplemented by an aerial survey.

Progress of Appraisal Parties.--Carey H. Bennett's party has completed work in Washington State and is moving to Idaho to begin work there. George D. Chittick's party is continuing work in Texas. Albert J. Rissman's party is working in Montana.

Appointment.--Miss Gladys B. Wallace, junior stenographer, has been transferred to this division from the Bureau of Internal Revenue, Treasury Department.

#### GAME AND BIRD CONSERVATION

Elk Refuge Notes.--Practically all the elk that wintered at the Elk Refuge and vicinity, in Jackson Hole, Wyo., had migrated back to their summer range by May 1. With the lightest snowfalls on record in Jackson Hole for many years, the losses of elk in the southern herd have been exceptionally few. Of the 2,500 to 3,000 elk that wintered on the refuge and adjacent ranches, Protector A. P. Nelson states that he has found only 12 dead.

The streams from which irrigation water is obtained for the refuge are unusually low for this season, and when warm weather comes the light snow on the watershed will not materially increase the stream flow. Unless there is sufficient rain during the remainder of the spring and in summer, it is certain that there will be a short hay yield.

Buffalo Calves at the Big-Game Preserves.--Births of 68 buffalo calves have been reported as follows: At the National Bison Range, Mont., 43, of which 2 were found dead; at Wind Cave Game Preserve, S. Dak., 13; and at Niobrara Reservation, Nebr., 12.

Visitors at Sullys Hill Game Preserve.--D. G. Miller, engineer, of the Division of Agricultural Engineering, Bureau of Public Roads, St. Paul, Minn., visited Sullys Hill Game Preserve, N. Dak., from April 6 to 17, studying conditions with reference to improvement work contemplated. On April 11, Prof. Howard Simpson, State water geologist of the North Dakota University, Grand Forks, N. Dak., was at the preserve to study matters pertaining to the development of the water system. During April visitors included 624 persons with 50 cars.

Confer on Emergency Construction Program.--Kenneth F. Roahen, acting in charge of the National Bison Range, Moiese, Mont., was in Chicago on April 17 conferring with W. R. Dillon, assistant game conservation officer, in connection with the emergency construction program at this reservation.

Appointment.--Charles I. Park, of Key West, Fla., has been appointed deputy reservation protector at Tortugas Keys Bird Refuge, Fla., for the 1931 nesting season.



Feeding Stations Proving Successful on Upper Mississippi.--Migratory waterfowl breeding stations maintained at advantageous points in the Upper Mississippi Refuge are proving successful. Five situated in the Wabasha Flats unit in Buffalo County, Wis., have attracted considerable numbers of wild ducks, for the most part mallards and bluebills. Ranger Lundberg, who is supervising feeding operations in that area, reports that the birds show an inclination to remain as long as they are provided with food and are not molested.

Sixteen Upper Mississippi Court Cases Terminated.--Sixteen cases, eight Federal and eight involving infractions of the State game laws, on the Upper Mississippi Refuge were successfully terminated during the month. One jail sentence of 60 days, one of 30 days, and two of not to exceed 6 months were imposed. Fines aggregated \$285, while the costs were \$118.50. In addition one 500-foot seine was confiscated. Evidence in the State cases, all involving illegal fishing, was obtained by Rangers Lundberg, Hall, and Lawrence and by Deputy Rangers Berni and Frerichs. Of the Federal cases, 3 involved illegal trapping on a refuge area, while 5 were violations of the migratory-bird treaty act. Evidence in the cases involving illegal trapping on the refuge was obtained by Rangers Hall and Lawrence, that in the treaty-act cases by Superintendent Steele and Ranger Lawrence.

Quail Importations from Mexico Drop.--Importation of quail from Mexico during the season just closed shows a considerable decrease from shipments in previous years. The total of 39,712 brought in represents the smallest number entered in any season since 1926. Last year the importations amounted to 90,124. According to reports from importers, the decrease this year seems to have been caused by heavy rains during the past winter, making it difficult to capture the birds.

Parrots Again Reach New York.--The first large shipment of parrots from southern Brazil since the embargo of January 24, 1930, containing 100 blue-fronted Amazons, arrived at New York on April 28. The birds were quarantined 15 days on Hoffman Island.

Young Bears Interest Importers.--Considerable interest has developed in the importation of young bears, and since April 15 permits have been issued for 29 shipments containing 52 cubs. Most of the entries are made by one shipper in Winnipeg, Manitoba, through the port of Noyes, Minn.

Other interesting arrivals during the month included a female gorilla at New York, May 11 from West Africa; and 4 fur seals, 2 sea lions, and 2 elephant seals at San Diego, Calif., April 28, from Guadalupe Island, Lower California, under special permits from the Mexican Government. Permits were also issued for entry at New York of 18 African flamingoes and of 908 eggs of game birds, mostly pheasant eggs from England.

Meets with Directors of Audubon Association.--Dr. T. S. Palmer, who is vice-president of the National Association of Audubon Societies, attended the meeting of the Society's board of directors in New York May 4 to 5. While in New York, Doctor Palmer also conferred with importers and with the Biological Survey's inspector at the port of New York.

Game Protector's Son Awarded Scholarship.--De Los Colvin Ransom, son of United States Game Protector Webster H. Ransom, of Spokane, Wash., has received the Whitman College honor scholarship of \$200 awarded each year to a student of Lewis and Clark High School, where Ransom will be graduated this June, says the Spokane Spokesman Review of May 13. "Integrity, scholarship, sincerity of purpose, and future promise" are the basis of the award.



Pays \$250 for Killing Duck in Close Season.--Charged with killing one wild duck from a motor boat during the close season in Cole County, Mo., an offender arraigned in Federal court at Jefferson City on April 20 entered a plea of guilty and was fined \$250. He had been arrested by Game Protector Barmeier, assisted by Deputy Game Wardens Adams and Davis, and remained in jail for two days before being able to furnish bond for release.

Inspects Fur Shipments in Chicago and New York.--Attending to work at raw-fur establishments and making inspections of fur records, Frank P. Callaghan, of the Washington office, has spent two weeks this month in Chicago and one week in New York City and vicinity with Game Protectors Creech and Farnham, respectively.

Refuge Superintendent in Washington.--R. C. Steele, superintendent of the Upper Mississippi River Wild Life Refuge, was in the Washington office April 29 and 30 for a conference with Survey officials.

New Fisheries Inspector Here for Visit.--E. L. Flanders, former fish and game commissioner of Vermont, was a visitor at the Washington office a few days early in May. He is one of the new inspectors recently appointed by the Bureau of Fisheries under the Federal Black Bass Law, which is being administered by Talbott Denmead, formerly of the Survey.

End of Worries about Herons and Egrets Seen.--Game Protector J. V. Kelsey, of Daytona Beach, Fla., reports that birds of many species once hunted for their plumes have greatly increased in Florida from the sorry remnant of a few years ago. Mr. Kelsey considers the Florida work the greatest single example of bird conservation and law enforcement in wildlife conservation history, and says that if the ground already won can be held, great white herons, American egrets, and snowy herons will not be worries for bird conservationists in the future.

Protector in Georgia Sees More Wood Ducks Than Ever.--Game Protector E. B. Whitehead writes that on April 2 when he visited Kicklighter Lake near the Ogeechee River in Georgia, he observed several hundred wood ducks, most of them about a week old. This is the earliest Mr. Whitehead has seen young wood ducks in that locality, and he will be interested to see whether a second brood is raised. He states that he never before has seen so many wood ducks in his district. They are nesting and breeding in great numbers on all the rivers, especially in the vast cypress swamps on the Canoochee and Ogeechee Rivers.

Texas Protector Reports.--Game Protector Frank Clarkson, of Houston, Tex., reported for the week of April 19 to 25 that it was unusually cool for that time of year there, and that there were still many ducks on the marshes. He also saw several black-bellied plover at Galveston. One resident informed him that on a private lake near Galveston there was a blue-winged teal with seven young, and also some young coots.

Albino Mallard Seen in Missouri.--U. S. Deputy Game Warden D. E. Adams reported on April 24 that on several different days he had seen a pure white albino mallard at Marais Temps Claire Lake, Mo.

Snow Fatal to Caribou in Alaska.--More than 300 caribou have died on Unimak Island in the heaviest snowfall there in the past 10 years, according to a report to the Alaska Game Commission from Alaska Game Warden Homer W. Jewell, at False Pass.

Treaty-Act Cases Reported during April

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Adams*, Davis*	1	Missouri	Killing a duck from a motor boat
Barmeier, Richmond*	1	Kentucky	Killing coots in close season
Birsch, Lewark	2	North Carolina	Killing geese in excess of daily limit
Charlton, Bowersox*	1	Indiana	Pursuing and driving migratory waterfowl with a power boat; possessing ducks in close season
" "	1	"	Hunting and killing ducks in close season
Creech	2	Illinois	Hunting ducks in close season
Hall*	3	Minnesota	Hunting ducks after sunset
Harris*, Jamieson**	1	Arkansas	Possessing wood ducks
" "	1	"	Hunting ducks after sunset
Hoffman, Oberhaus*	1	Alabama	Stirring up, driving, and concentrating ducks with a motor boat
Holmes, Baumgartner**, Bunney**, DeVry**	4	Nebraska	Killing ducks in close season
Holmes, Hough**	1	Iowa	Killing and possessing ducks in close season
Hull*, Argyle**, Hull**	3	Utah	Killing ducks after sunset
Hull*, Hull**	1	"	Killing ducks after sunset
Johnson, Book*	2	Louisiana	Selling ducks
Johnson, Doucet*, Woods*	1	"	Selling ducks
Lane, Woodhouse**	1	North Carolina	Killing geese in excess of daily limit
Leichhardt	1	Washington	Possessing sandpipers
Leichhardt, Hubbard*	5	"	Hunting ducks after sunset
Lewark	2	North Carolina	Killing geese in excess of daily limit
"	2	" "	Hunting migratory waterfowl at night
Nill*	1	Kansas	Possessing a meadowlark
Perry, Huhn*	3	Missouri	Hunting ducks in close season
Perry, Lawhorn**	3	Kansas	Killing whistling swans
Ransom, Fenstermaker*	1	Washington	Killing a duck after sunset
Riddick	1	Arkansas	Killing ducks in close season
"	1	"	Selling ducks
Roahen, Curtis**	1	Wisconsin	Selling ducks
Shaver	5	South Dakota	Hunting ducks after sunset
"	2	" "	Hunting geese in close season
"	1	Wisconsin	Hunting ducks in close season
Shaver, Cardoff*	2	Minnesota	Possessing ducks and coots in close season
Shaver, Rogalla*	1	"	Hunting ducks in close season
Shaver, Vogel*	5	South Dakota	Hunting ducks after sunset
Smith	2	Maine	Possessing ducks in close season
Tonkin, Glidden**, Toms**	7	California	Driving ducks
Towle*, Carter**	1	Idaho	Hunting ducks after sunset
Whitehead	13	Georgia	Killing and possessing doves in close season
"	1	Florida	Possessing ducks in excess of daily limit
"	2	"	Killing and possessing ducks in excess of daily limit
"	3	South Carolina	Hunting ducks in close season

\* U. S. deputy game warden.

\*\* Deputy State game warden.

Bird Reservation Trespass Cases Reported during April

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Hubbard*	1	Washington	Hunting waterfowl on closed area
Leichhardt, Benson*	9	Oregon	Hunting waterfowl on closed area
Leichhardt, Hubbard*	2	Washington	Hunting and trespassing on closed area
" "	2	"	Hunting on closed area
Salisbury*	4	California	Hunting and trespassing on closed area

Treaty-Act Cases Terminated--Reports Received during April

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Adams*, Davis*	1	Missouri	Killing a duck from a motor boat	\$250
Johnson, Book**, St. Germain**	1	Louisiana	Selling ducks	Sentence suspended for period of 5 years
Lewark	2	North Carolina	Hunting migratory waterfowl at night	\$25 each
Ransom, Fenstermaker*	1	Washington	Killing a duck after sunset	\$5

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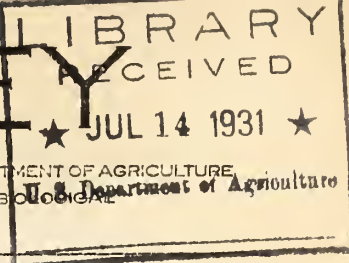
\* U. S. deputy game warden.

\*\* Deputy State game warden.





# THE SURVEY



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## GENERAL NOTES

Chief Makes Investigations in West and Alaska.—Mr. Redington left Washington on May 29 for an extended trip in the West and Alaska. At Salt Lake City and Ogden, Utah, he conferred with Bureau project leaders and inspected construction work on the Bear River Migratory Bird Refuge. From June 8 to 17, as a member of a party of representatives of the Forest Service, the Biological Survey, the Arizona Fish and Game Commission, and national conservation organizations, and with E. A. Goldman and S. B. Locke of the Division of Biological Investigations, he investigated conditions affecting the welfare of the deer on the Kaibab National Forest, in northern Arizona. Later in Reno, Nev., Berkeley and San Francisco, Calif., and Portland, Oreg., he conferred with Bureau representatives and cooperators. On June 28 he sailed from Seattle, Wash., for Alaska, with members of the Special Senate Committee on Wild Life Resources to study game and fish problems in the Territory.

Survey Officials Investigate Waterfowl Problems.—Mr. Henderson left Washington for Ottawa, Canada, on June 25, to confer with Canadian officials regarding the effects of the drought and other factors adverse to the waterfowl protected by both the United States and Canada under the provisions of the migratory-bird treaty. He discussed with them the best methods of cooperation to obtain data on conditions affecting the waterfowl on their breeding grounds and to gather other pertinent information. After conferring with game protectionists in New England on related problems, Mr. Henderson returned to Washington, on June 30.

On June 25, also, Dr. W. B. Bell left Washington to visit points in Minnesota and several of the Northern Plains States and the prairie Provinces of Canada to investigate conditions affecting important species of waterfowl in the heart of their breeding grounds. In this work he will cooperate with State and Provincial conservation officers along the lines discussed by Mr. Henderson with officials of the Dominion.

Doctor Merriam, Former Chief, Honored.—Dr. C. Hart Merriam, chief of the Biological Survey from the time of its establishment as a Section of Economic Ornithology in 1885 to 1910, is one of three prominent Americans to be awarded Roosevelt Medals for Distinguished Service, according to an announcement made on June 23 by James R. Garfield, president of the Roosevelt Memorial Association. Doctor Merriam was honored for his research in natural history. The other recipients of the honor this year will be Benjamin N. Cardozo, for services in the development of the law, and Hamlin Garland, novelist, dramatist, and social historian of America. The medals will be bestowed by Mr. Garfield at a dinner at Roosevelt House, New York, N. Y., the birthplace of Theodore Roosevelt, on October 27, the seventy-third anniversary of the former president's birth.

"C. Hart Merriam," says the announcement, "receives the Roosevelt Medal for distinguished service in the advancement of the study of natural history. He founded the division of ornithology and mammalogy in the Federal Department of Agriculture in 1885 (later called the United States Biological Survey) and, as its chief for twenty-five years introduced methods of research and study which constitute the basic structure of the present school of American Mammalogy, regarded by scientists as the most advanced in the world. He brought the

study of natural history out of the laboratory into the open spaces of field and wood and sky. Theodore Roosevelt in his 'autobiography' acclaimed his leadership."

His former associates and the host of new members of the Biological Survey congratulate Doctor Merriam on this, his latest honor. Doctor Merriam continues his interest in the work of the Bureau that he founded nearly half a century ago, and is a regular reader of its house organ THE SURVEY.

Represent Bureau at Forestry Meetings.--Dr. W. B. Bell and Lisle Morrison were in Asheville, N. C., June 2 to 5, attending the meeting of the Research Council of the Appalachian Forest Experiment Station on June 2 and the meeting of the American Forestry Association, June 3 to 5. T. D. Burleigh, of the Forest Experiment Station, also attended the council's meeting; and W. L. McAtee and Clarence Cottam, on a vacation trip, included Asheville in their itinerary and participated in two excursions of the forestry association.

Resolutions adopted by the experiment station council endorsed the research projects under way, including favorable comment on the Biological Survey's study of the relation of wild life to forestry, and urged an extension of this Bureau's work.

At the American Forestry Association's meeting, the Survey's game-bird exhibit, under the supervision of Mr. Morrison, is reported to have attracted much interest and favorable comment. Doctor Bell served as chairman of the exhibit committee that selected winners in the Association's fire-poster contest.

Attend Dinner in Honor of Doctor Howard.--Dr. E. W. Nelson, former chief of the Survey, and Mr. Henderson, Dr. W. B. Bell, Dr. A. K. Fisher, F. C. Lincoln, Dr. T. S. Palmer, and E. A. Preble attended a dinner at the Cosmos Club June 11 in honor of Dr. L. O. Howard, former chief of the Bureau of Entomology. The occasion was both a celebration of Doctor Howard's seventy-fourth birthday and a farewell dinner for him on his approaching retirement from the Department on June 30.

Captain William Morgan Sprinkle, former warden of the Breton Island Reservation, La., died suddenly while on a fishing trip in the Gulf of Mexico on April 25, 1931. His body was brought to Gulfport on a Coast Guard Cutter and was buried in Pass Christian, Miss. Captain Sprinkle was born at Pascagoula, Miss., August 29, 1853, the son of John and Elizabeth Morfett Sprinkle, and was in his seventy-eighth year at the time of his death. He was married at Mobile, Ala., August 31, 1883, to Miss Hannah Halford. He is survived by his wife, his son, William Levi, and a daughter, Mrs. W. E. Windham, to whom sympathy is extended.

Shortly after the establishment of the Breton Island Bird Reservation Captain Sprinkle was appointed as its warden, a position that he filled actively from December 1, 1904, to July 31, 1921. In his early days he had hunted birds for their plumes and was personally acquainted not only with the common sea birds but with the methods of plume hunters, an experience that eminently qualified him for the difficult work of protecting the birds. In 1915 while serving as warden he accompanied ex-President Roosevelt to the reservation that Roosevelt had established by Executive order.

Breton Island was the second bird reservation thus established, and Sprinkle's length of service was exceeded only by that of the warden in charge of the first reservation--Pelican Island. His passing recalls some of the hardships and the peculiar difficulties of protecting the birds on this reservation, which were mentioned by ex-President Roosevelt in his account of the trip. -- T. S. P.

President of American Society of Mammalogists a Caller.--Dr. Marcus W. Lyon, jr., of South Bend, Ind., newly-elected president of the American Society of Mammalogists, called at the Bureau on June 11.



Former Employees Visit Bureau.--Dr. Morris A. Stewart, formerly assistant to James Silver in the Division of Predatory Animal and Rodent Control and now head of the section of ecology of the biology department at Rice Institute, Houston, Tex., visited the Washington offices of the Bureau during the week of June 15.

Samuel S. Dickey, of Waynesburg, Pa., a student of birds and plants of the Alleghenies in southern Pennsylvania, western Maryland, and West Virginia, at one time an assistant to Dr. H. H. T. Jackson in caring for the Bureau's mammal collection, visited the Washington office on June 19.

"Wild Game--Its Legal Status" is the title of a 50-page booklet recently issued by the Game Conservation Department of the E. I. du Pont de Nemours & Co. (Inc.), of Wilmington, Del. It is a reprint of a report made a short time ago to the Massachusetts Game and Fish Association by its attorney, and is now issued in line with the company's announced policy of ascertaining the facts regarding game production and making them known "for a better outdoors," for the mutual benefit of the landowner, the sportsman, and the general public. The booklet defines game in terms of court decisions, and in the same manner presents a historical statement and a general summary of laws on game ownership from the time of the ancient Roman Empire and mediaeval and modern Europe down through the common law inherited by the American colonies, to the stewardship of the individual States. Reference to this publication is here made to inform field men of the Survey that the du Pont Company is making copies available to those interested, free for the asking, as long as the present supply lasts.

Seek Economy in Salaries and Expenditures.--In the light of the present financial situation of the Government and the policy of the Department to effect economies in every possible way, it has been announced that there will be no promotions during the fiscal year 1932. It will be necessary also for the Bureau to make substantial savings in its proposed expenditures for the period.

Official Publications.--The following were issued during the month:

- "English Sparrow Control." Leaflet No. 61, revised. Dated, April, 1931. Received June 17.
- "Elk in Jackson Hole Studied to Facilitate Wild-Life Management," by Olaus J. Murie. Yearbook for 1931, pp. 209-211.
- "Fur-Trade Exposition Includes Special Exhibit of the U. S. Government," by J. E. Shillinger. Yearbook for 1931, pp. 270-272, illus.
- "Musk Oxen Brought from Greenland to Restock Alaska's Tundra Lands," by Edward A. Preble. Yearbook for 1931, pp. 398-402, illus.
- "Refuges being Created for the Protection of Migratory Birds," by Rudolph Dieffenbach. Yearbook for 1931, pp. 456-459.
- "Soil Erosion Is Often Caused by Burrowing Rodents," by Albert M. Day. Yearbook for 1931, pp. 481-484, illus.
- "Wild-fowl Conservation Furthered by Regulation and Educational Methods," by Wm. H. Cheesman. Yearbook for 1931, pp. 542-544, illus.
- "Hunters' Licenses Issued by States, with Total Money Returns, for the Seasons 1927-28 and 1928-29." Yearbook for 1931, Table 568, p. 1053.

The date of receipt of the Yearbook of Agriculture for 1931 was June 4.

#### BIOLOGICAL INVESTIGATIONS

Investigates Field Conditions.--After attending the American Forestry Association meeting in Asheville, N. C., Doctor Bell spent four days in reviewing field conditions in con-

nection with the Appalachian Forest Experiment Station, noting the progress in the investigational program, and making further plans for research work being conducted by T. D. Burleigh at that station.

Reports Trips in Superior and Chippewa Forests.--Clarence M. Aldous, of the Lake States Forest Experiment Station, St. Paul, Minn., reports having recently made a canoe trip in the Superior National Forest, in company with representatives of the Forest Service, studying wild-life conditions in that region. He also reports good progress being made in establishing experimental areas on the Chippewa National Forest in the vicinity of Cass Lake.

Takes Part in Study of Deer's Effect on Vegetation.--E. A. Goldman returned to Washington on June 25, after taking part in work of a special committee appointed by the Forest Service to study deer and their effect upon vegetation in the Kaibab National Forest.

Return from Haiti.--F. C. Lincoln and Doctor Wetmore returned to Washington from their Haitian expedition on June 1. Mr. Lincoln reports that after the trip to the Morne la Hotte and Ile a Vache (noted in the May number of The Survey, page 62), the party returned to Port au Prince, Haiti, reconditioned their equipment, hired a Ford car, and drove to Barahona on the southeast coast of the Dominican Republic. There they chartered a little 8-ton sloop and sailed to Beata Island, which had never before been visited by an ornithologist. This island is severely desert, consisting of sharply eroded limestone with very little top soil, and is covered with dense thorny scrub and cactus. An important collection of birds and reptiles was made, and Mr. Lincoln states that it was of the greatest interest to see barn swallows and several species of small North American shorebirds that were still there on May 15. The party returned to Port au Prince, Haiti, on May 20, and at points readily accessible from that city devoted a few days to collecting, before sailing for New York on the Panama Railroad Steamship Line steamer Ancon, on May 27.

Vernon Baileys Beaver Trap Wins Prize.--The American Humane Society, with headquarters at Albany, N. Y., recently awarded one of its major prizes to the Biological Survey beaver trap for taking beavers alive and uninjured. Invented and patented by Vernon Bailey during his study of beaver problems for the Survey, the trap is being successfully used in many States--officially by Michigan, Pennsylvania, and New York, as well as privately by many individuals interested in beavers in this country, in Canada, and abroad. The trap is considered a notable contribution to progress in the use of humane and intelligent methods of capture.

Reads Paper on Jack-Rabbit Studies.--Dr. W. P. Taylor attended the meeting of the Pacific Division of the American Association for the Advancement of Science at Pasadena, Calif., June 15-20. He also read to the association a paper on grazing-range studies of jack rabbits in southern Arizona.

To Confer with Cooperators on Texas Bird Report.--Dr. H. C. Oberholser left on June 25 for San Antonio and other points in Texas to confer with cooperators on the proposed publication of his report on the birds of Texas.

#### FOOD HABITS RESEARCH

Assists Game Bird Studies.--Wallace B. Grange participated in the inspection of a proposed quail demonstration area in Illinois during the month. He also has been working with Game Institute Fellows in Michigan and Minnesota.

Establishment of Western Laboratory under Way.--Chas. C. Sperry, after preparing equipment for the new laboratory to be established at Denver, Colo., for the study of predatory animals' food habits, left Washington on June 11 by automobile for Denver, where he will have his headquarters. Two junior biologists are to be assigned to the laboratory early in July; and it is expected that another worker from the Washington office, with an employee yet to be obtained, will be assigned to the laboratory for work in economic ornithology.

Migratory Game Bird Refuge Surveys.--A. C. Martin made a trip to New Jersey early in June to inspect proposed migratory game bird refuges and is now in the Southeastern States where an extensive program of inspection is in progress. Later F. M. Uhler accompanied by Arnold L. Nelson made a brief trip to the eastern shore of Maryland for a similar purpose.

Sympathy is extended to Dr. A. K. Fisher, whose brother, Henry Fisher, died at Vine-land, N. J., on June 30, in his eighty-ninth year.

### FUR RESOURCES

Visits Western Stations.--Mr. Ashbrook left for western points on June 3. He first spent one day at the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., discussing the work with Doctor Hanson. He stopped over in Chicago, Ill., and Phoenix, Ariz., en route to Fontana, Calif., and arrived there on June 10. At Phoenix, with D. A. Gilchrist, Regional Supervisor, he discussed various phases of the predatory animal and rodent control work in their relation to the work of the Division of Fur Resources. He saw the motion pictures and lantern slides demonstrating the extension work and reported them as very interesting.

Experiment Station Buys Fishers.--Two pairs of fishers for the Experiment Station, Doctor Hanson reports, have been purchased from a farm in Idaho. These fishers, which have been raised in captivity and have produced young, will be housed in the old marten pens, and experiments will be conducted to ascertain their breeding season and gestation period.

Month-Old Martens Doing Well.--The one male and three female martens born at the Fur Animal Experiment Station during the last week in April are developing satisfactorily. They are offspring of the two pairs that produced young last year and are expected to be a valuable nucleus with which to perform feeding and breeding experiments.

Cross-Breeding Experiments Successful.--The young foxes at the Fur-Animal Experiment Station this year are doing nicely and are well developed. Some of them, from cross-breeding experiments, have indicated definitely certain factors investigators have been seeking.

Control Division Sends Fur Animal Station 5 Fox Cubs.--Five young red foxes sent to the Fur-Animal Experiment Station at Saratoga Springs, N. Y., from Michigan by the Division of Predatory Animal and Rodent Control, arrived in good shape and are doing nicely. They are unusually tame and appear to have been kept in a pen from the time they were dug out of a den.

Rabbit Breeders Study Genetics at Fontana.--John W. Meyer, in Charge of the Rabbit Experiment Station in Fontana, Calif., in cooperation with Dr. A. W. Bellamy, of the University of California, arranged a short course in genetics at the rabbit station on May 28 and 29, which was attended by about 14 prominent rabbit breeders in the Fontana district. Doctor Bellamy illustrated on a blackboard fundamental principles of biology, particularly the relation of genetics to practical rabbit breeding. At the conclusion of the course, the rabbit breeders arranged to have the lectures continued.



4-H Club Goes to Camp.--The Cloverleaf Rabbit Club of Fontana, Calif., of which A. E. Suitor is the leader, left Fontana on June 3, to participate in the county 4-H encampment at Camp Radford in the San Bernardino Mountains. Mr. Suitor's group, trained to demonstrate the fundamental principles of producing rabbits for meat and fur, was called upon for demonstrations and talks.

Boys' Rabbit Club Wins Prize.--A booth demonstrating the achievements of one member of the Cloverleaf Rabbit Club, of Fontana, Calif., was awarded first prize at the Anaheim Valencia Orange Show, held in Anaheim, Calif., June 4 to 13, to demonstrate the work of the boys' club in connection with raising rabbits. The boy winning first prize showed a return from his rabbit project of \$38.65 in six months.

Arrive in Fontana.--Mrs. John W. Meyer, wife of the director of the Rabbit Station, accompanied by her two children, arrived at Fontana from Washington, D. C., on June 6. They were delayed in Washington on account of the illness of John who had to undergo an operation for mastoiditis.

Miss Jozy Dell Hall, temporarily detailed to assist in the work at the Rabbit Experiment Station, arrived on June 8. After a very interesting trip across the United States and through parts of Canada, she reports that she is gradually becoming accustomed to the fogs and sunshine of California.

Rabbit Experiment Station Participates in Fontana Day Parade.--Fontana celebrated its eighteenth anniversary on June 6 with a parade representing colorful eras of pioneer days in the Southwest. The float designed by employees of the Rabbit Experiment Station represented a covered wagon driven by A. E. Suitor, costumed as a pioneer, and E. C. Page, taking the part of a hunter. Within the wagon were various supplies, equipment used by pioneers for hunting and trapping, and specimens of fur-animal skins.

Fur Weekly Reports Fur-Catch Decrease Due to Natural Causes.--The Fur Trade Review Weekly of June 18 reports that "the catch of pelts in North America during the winter season of 1930-31 was considerably below the catch taken last year," and attributes the continuing decrease in the catch to extensive floods in 1927 in the Middle West and New England, to the drought of 1930, to lower prices quoted on pelts during the seasons of 1929-30 and 1930-31, and to extensive forest and brush fires in 1929 and 1930.

Muskrats Found Not Guilty.--Damage to a dam near Hagerstown, Md., blamed on muskrats, was found to have been due to some other cause, reports Frank R. Smith, agent in charge of investigations at Church Creek, Md. An inspection by Mr. Smith showed that the water had gone down into some underground cavern through a hole 6 feet below the surface, but that there were no signs of muskrats about the dam. Smith also reports that his experiments are progressing satisfactorily.

Studies Outbreak of Disease.--Dr. Karl B. Hanson, called to a fox ranch in Boonville, N. Y., on May 23, and again on June 15, to assist in controlling an outbreak of disease among the animals, performed an autopsy on a number of carcasses and gathered material for further examination.

#### DISEASE INVESTIGATIONS

Organizes Quail-Disease Investigations at Richmond.--Doctor Shillinger has made two short trips during the past month to Richmond, Va., to organize investigations on the study

of game-bird diseases. The State Biochemic Laboratory has been made available for furthering these investigations, and cooperation has also been offered by the White Oak Quail Farm and the State Game Farm near Richmond.

New Veterinarian Employed.--Dr. L. C. Morley, a graduate of the Veterinary Department of the Iowa State College at Ames and recently a fellow at the Virginia Polytechnic Institute, has been employed to investigate diseases of quail. He will work with Dr. F. D. McKenney on this project to prevent extensive losses of quail on game farms because of disease.

#### PREDATORY ANIMAL AND RODENT CONTROL

Cooperative Funds Granted by Recent Legislation.--Cooperative funds for predatory-animal and rodent control work in 16 States during the coming biennium are assured as a result of recent legislation in Washington, Oregon, California, Nevada, Utah, Arizona, New Mexico, Montana, Colorado, Wyoming, Oklahoma, Arkansas, Texas, Idaho, Wisconsin, and Michigan. The legislation is considered by the leaders in control operations an evidence of appreciation of control work, in view of the financial conditions throughout the country.

Effective January 1, 1931, a slight increase in funds over the past biennium has become available in Nevada. Predatory-animal control work in Idaho will continue in cooperation with the various counties receiving predatory-animal tax by allocation of the State Predatory-Animal Board. It is probable that new cooperation with the Fish and Game Department in South Dakota will be instituted by early fall. New legislation appropriating \$10,000 per year, has been passed in Missouri, and request has been made for the Bureau to enter into cooperative wolf control there. Cooperative work in Montana will continue with the State Live Stock Board instead of the State Game and Fish Department.

Cooperative funds in Alaska were withheld by recent action of the Territorial legislature because of the financial depression. However, at the request of the Governor of Alaska and other Territorial officials, the Bureau will continue its work there under the leadership of Harlan H. Gubser.

Return from Field Trips.--Albert M. Day returned to the Washington office on June 5 after six weeks spent with leaders in Wyoming, Colorado, New Mexico, Arizona, Texas, Oklahoma, and Arkansas.

On June 11 W. E. Crouch returned from visits to field stations in Colorado, Wyoming, Idaho, Oregon, Washington, Montana, North Dakota, Wisconsin, and Michigan. Both Mr. Crouch and Mr. Day began these field trips immediately following the conclusion of the divisional conference at Denver.

Oklahoma Officials Visit Bureau.--Ben E. Mobley, State Game Warden of Oklahoma, William Leighton a member of the Oklahoma State Game Commission, and Mr. McMurtery in charge of reservations of the State Game Department, visited the Washington office on June 10 and discussed various matters connected with cooperative work in Oklahoma.

Wolf Pups Sent to National Zoological Park.--Eight timber wolf pups recently taken by a State hunter in the upper peninsula of Michigan have been presented by Leader H. P. Williams to the National Zoological Park, at Washington, where they are now on exhibition.

Heavy Livestock Depredations Reported from Washington.--Leader Leo K. Couch reports the destruction by coyotes of 150 lambs near Yakima, Wash., and 100 on the Colville Indian Reservation. He also states that the Supervisor of the Okanogan Forest reports 300 sheep

killed by bears and 200 by coyotes last year in that Forest. Other reports indicate similar depredations and losses.

Coyote Depredations in Wyoming.--Hunters Milton Robinson and Fred Bates, of Wyoming, found about 20 sage hen nests destroyed by coyotes near Rock Springs during the month of May, according to reports from Leader Adolph S. Hamm. Hamm also reports that on May 10 a hunter near Rock Springs found a coyote den in which a pack rat had eaten half a pup, and packed off another one.

Make Changes in Denver Headquarters.--The headquarters office of the Colorado predatory-animal and rodent control district formerly in the Old Custom House Building in Denver has been moved to Room 345 of the New Custom House Building. The Denver laboratory was also moved from 2254 Lawrence Street to Room 527 of the New Custom House Building.

Dogs Kill Poultry.--Loss of 168 out of a flock of 170 ten-weeks-old pullets recently reported by a poultry man in Colorado and attributed to poison was found to have been due to dog depredations. Two of the dead birds were examined by an assistant bacteriologist of the Bureau of Animal Industry, assisted by Leo L. Laythe, F. E. Garlough, and J. C. Ward of the Biological Survey. This examination and observation about the poultry plant indicated definitely that dogs were responsible for the work.

Reports Large Catch of Coyotes.--Leo K. Couch, leader of predatory-animal and rodent control in the Washington district, reports that Hunter Fred Peterson, of Prosser, took 176 coyotes over a 30-day period in the Horse Heaven and White Bluffs-Hanford section--apparently, says Couch, a "coyote paradise" with an unusually heavy concentration of denning animals.

Congratulations and best wishes are extended to Mr. and Mrs. Eddie B. Ligon on their marriage, which has recently been announced. Mr. Ligon is assistant leader of predatory-animal control in the Texas district.

Sympathy is extended to Mrs. Bessie M. Smith of this Division in the death of her husband, Dr. Albert Smith, on June 6.

#### DIVISION OF LAND ACQUISITION

Complete Some Aspects of Cape Romain Investigation.--J. P. Wenchel and J. N. Menefee, with Mr. Dieffenbach, during the latter part of May completed investigation of several aspects of title and land ownership within the Cape Romain Refuge at Charleston, S. C. The investigation included physical examination of a large part of the property and conference with landowners at Charleston, S. C.

To Come on Detail to Washington.--Albert J. Rissman and Howard J. Sargeant have completed their examination assignment in Minnesota, and Mr. Rissman is reporting to Washington for a temporary detail. Mr. Sargeant is being transferred to Carey H. Bennett's party, and W. T. Krummes is being temporarily detailed to Washington. Both Messrs. Rissman and Krummes are to assist in the compilation of accumulated data, and to familiarize themselves with the Washington office procedure.

Progress of Parties.--Rudolph O. Gustafson, assisted by Peter J. Van Huizen, is continuing work on Okefenokee Swamp in Georgia. George D. Chittick's party is continuing work in Texas. Carey H. Bennett's party is now working in Colorado.



Examine Proposed Refuge in New Jersey.--Robert M. Rutherford, in company with A. C. Martin, during the week of June 7, made a reconnaissance examination of an extensive area in southern New Jersey, which had been represented as desirable for a migratory bird refuge.

Emergency Employment Ends on June 30.--The boundary survey and posting work authorized under the Emergency Relief Legislation terminates effective June 30. Because of unforeseen difficulties on some of the jobs the program was not so satisfactory as anticipated.

Transitman Resigns.--Armand F. Allard, who conducted surveying work on various refuges, resigned, effective June 15, to take up private ranching. The Bureau regrets to lose Allard, but wishes him success in whatever he undertakes. On May 23 Charles S. Cook left Washington for Jackson, Wyo., to take over the work being conducted by Allard on the Elk Refuge.

Effective June 8 Lawrence K. Hayes, of Pontiac, Mich., was appointed to fill the vacancy caused by Mr. Allard's resignation. Mr. Hayes was graduated from the University of Detroit with a degree in civil engineering in 1929, and soon afterwards was employed as an inspector of sewer construction by the city of Pontiac, Mich. Since July, 1930, he has been an engineering aid under appointment by the Interstate Commerce Commission.

Appointment.--James M. McQueen, jr., of Washington, D. C., was appointed, effective June 10, as under engineering aid to assist in field surveys of areas proposed for migratory bird refuges. For two years he majored in civil engineering at the George Washington University and is a student member of the American Society of Civil Engineers.

#### GAME AND BIRD CONSERVATION

Sees Hundreds of Doves, Egrets, and Herons.--Protector Steven E. Crossley, of Big Lake Bird Reservation, Ark., reports hundreds of mourning doves and a number of quail in the vicinity of the refuge along the roads and in the fields. On the last of May there were about 300 egrets and about 500 large blue herons at Big Lake, but up to that time, he says, he had seen none of the birds that he identified last year as great white herons, which are uncommon in that region. Wood ducks with broods of young have been seen, and a resident of the locality reported that he saw a mallard with 12 young, which is unusual for that section.

Sullys Hill Game Preserve Notes.--Three buffalo calves have been born at Sullys Hill Preserve this season. Unusually cold weather was experienced at this preserve during May. On May 19 snow fell; and during that night a frost, it was believed, killed all the early wild fruit. Ice formed three-eighths of an inch thick, and leaves on the trees had the appearance of having been burned. During May, 2,805 persons with 473 cars visited the game preserve.

Snow at the Elk Refuge, Wyo.--On May 21 about 6 inches of snow fell in the vicinity of the Elk Refuge, Wyo., and about 1 inch on the Izaak Walton League Addition.

Drought Threatens Lake Malheur Bird Life.--The severe drought that the Northwest is experiencing threatens serious consequences to Lake Malheur, according to reports from Protector George M. Benson of Lake Malheur Bird Reservation, Oreg. The Blitzen River is slowly falling, the Silvies River is very low, and the meadows are gradually drying up, he says, so that he fears many of the birds, especially the coots, will not come through the nesting season.

On May 27, a fire, partly on the reservation, was discovered. Efforts were made to keep it away from two haystacks about 3 miles west of the headquarters; but the high winds swept it toward them, and by night the hay was entirely destroyed. About 25 men fighting the fire plowed a deep ditch around it and soon had it under control.

On May 31, lightning started a fire in the central part of the refuge, about 2 miles northwest of headquarters. Protector Benson, with an assistant, went to the burning area, but ranchers of the vicinity had it already under control.

Visits Reservations.--Frank L. Earnshaw, assistant in reservations administration, returned on June 16 from a tour of inspection of various reservations, including the National Bison Range, Mont.; Sullys Hill Game Preserve, N. Dak.; and Niobrara Reservation, Nebr.

School Children Visit Niobrara Reservation.--The Cherry County (Nebr.) Superintendent of Schools brought 27 cars filled with school children to see the buffalo herd at Niobrara Reservation, Nebr., on May 23. G. A. Amundson, in charge of the reservation, and U. S. Game Protector Louis A. Branchaud, who has been assisting with new construction work there, took the party to the big pasture, where two men on horseback had herded the buffalo into a group. Mr. Branchaud talked to the party about the bird refuges, the game preserves, and the general work of the Survey; and Mr. Amundson spoke to them regarding the reservations and the building program now under way.

Louis Knowles, Leader, Predatory Animal and Rodent Control, for the South Dakota District of the Bureau, visited Niobrara on May 16.

Passage Key Reservation, Fla., Still Exists.--Deputy Reservation Protector Harold P. Bennett reports that he recently visited Passage Key Reservation, Fla., which several years ago was considerably washed away. He states that it is not only holding its own, but is slightly larger than it was last year.

Florida Reservations Posted.--R. W. Williams, deputy game conservation officer, with headquarters at Tallahassee, has recently posted signs at Cedar Keys, Matlacha Pass, and Pine Island Reservation, all in Florida.

Appointments.--Garnett W. Saye has been appointed Deputy Reservation Protector at Savannah River Bird Reservation, S. C.; and C. F. Cooper Deputy Reservation Protector at Anaho Island Bird Reservation, Nev.

Resignation.--Joseph Talla, employee of the Bureau of Reclamation stationed at Rupert, Idaho, has resigned as deputy reservation protector under this Bureau. Mr. Talla, who has cooperated with the Survey in protecting the birds on the Minidoka Bird Reservation, which is within the Minidoka Reclamation Project, has been transferred to Boulder City, Nev., where it will not be possible for him to continue his cooperation with the Survey.

Fishermen's League Hears of Bureau's Refuge Program.--The program of the State convention of the South Dakota Division of the Izaak Walton League of America held at Rapid City June 14-16 included an address by Ray C. Steele on the Upper Mississippi River Wild Life Refuge and the general refuge program of the Bureau.

Importations.--Among the rarer birds imported during the month were 2 turquoisine parrakeets (*Neophema pulchella*), 5 elegant grass parrakeets (*Neonardodes elegans*) from Australia and 1 thrush (*Platycichla venezuelensis*) from Venezuela. Owing to further restrictions by the State of California on the entry of certain foreign birds, two recent shipments of crested mynahs (*Aethiopsar cristatellus*) were refused entry; and because the importers were unwilling to return them, they were destroyed by the owners.

Bird Inspector at Honolulu Visits Washington.--L. A. Whitney, inspector of foreign birds, at Honolulu, Hawaii, visited the Washington offices on June 17.

New Alaska Game Commissioner.--Andrew A. Simons, of Lakeview, Alaska, for several years a registered guide, was appointed effective July 1, Alaska Game Commissioner from the Third Judicial Division to succeed Dr. William H. Chase, whose 4-year term expired on June 30.

Calves in the Buffalo Herd in Alaska.--Four young calves were recently seen with the buffalo herd in the Big Delta region east of Fairbanks, Alaska, according to a statement of the Alaska Game Commission. This addition to the herd brings the total to 32. The original herd, transferred to Alaska from the National Bison Range, Mont., in 1928, numbered 23.

Pay \$100 Each for Violating Trapping Law.--Four nonresidents of Alaska were fined \$100 each by the United States Commissioner at Kodiak on May 11, when they plead guilty to trapping without nonresident licenses. The men were arrested at Kukak Bay by Homer W. Jewell, Alaska game warden. Skins of 29 weasels, 11 foxes, 8 land otters, 2 lynxes, and 1 wolverene, were also seized and ordered forfeited to the Government.

Reports 1930 Alaska Fur Exports.--A recent report from H. W. Terhune, executive secretary of the Alaska Game Commission, based on returns filed according to law by Alaska fur-shippers, shows that 494,547 skins of land fur-bearing animals valued at \$2,128,148 were exported from Alaska in 1930. The 1930 exports increased in number 197,245 over 1929, but owing to a general decline in market prices, the total value decreased \$2,385,715 from that of the 1929 exports. The largest number of pelts of any one species was that of muskrat, 411,934 valued at \$230,683, while the greatest value for skins of any one species was \$553,792 for 16,288 red fox pelts.

Explorer Shows Movies of African Game.--Capt. Harold White, of Rhinebeck, N. Y., guest of Morris Legendre, secretary of the Special Senate Committee on Wild-Life Resources, showed some interesting African big game pictures in the motion picture laboratory on June 5. The exhibit included lion and rhinoceros pictures taken in a remote region of Africa seldom visited by white men. Captain White, well known as an explorer, has headed several expeditions for American museums.

Deputy Game Warden Dies.--The Survey has learned with regret of the death of Maj. Lawrence J. Mott, U. S. deputy game warden of Hollywood, Calif., which occurred on June 3 at his summer camp near Roseburg, Oreg. He is survived by his wife and two children, to whom the sympathy of the Bureau is extended.

Upper Mississippi Refuge Assistant Here Temporarily.--E. C. Hotchkiss, administrative assistant of the Upper Mississippi River Wild Life and Fish Refuge, Winona, Minn., who had been in Washington on official duty since June 1, returned to Winona on June 23. His former associates in the Washington office were glad to have him again in the offices.

Protector from North Carolina Here for Conference.--U. S. Game Protector William L. Birsch, of New Bern, N. C., was in the Washington office on June 5 for a conference with division officials, at the conclusion of which he proceeded to Savannah, Ga., where he conferred with U. S. Game Protector E. B. Whitehead. From Savannah, Mr. Birsch went to the Blackbeard Island Bird Reservation, Sapelo, Ga., to conduct supervisory work.

Elected.--Webster H. Ransom, U. S. game protector, Spokane, Wash., has been elected vice president of the Spokane Federal Business Association.



Bureau Motorboat Burns.--The Bureau motorboat Scaup was destroyed in a waterfront fire at New Bern, N. C., in the early morning of June 10. The boat, a cabin cruiser 41 feet in length, was acquired in 1920 and used by Game Protector W. L. Birsch in patrolling Pamlico Sound and tributary waters.

Treaty-Act Cases Reported during May

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Adams*	2	Illinois	Killing and possessing waterfowl in close season
" "	1	"	Hunting ducks in close season
Barmeier, Adams*, Davis*	1	Indiana	Possessing brant in storage in close season
Barmeier, Adams*, Davis*	1	"	Possessing ducks in storage in close season
Barmeier, Adams*, Davis*	1	Illinois	Possessing ducks in storage in close season
Barmeier, Adams*, Heller*	1	Missouri	Killing and possessing a duck in close season
Barmeier, Adams*, Heller*	2	"	Hunting ducks in close season
Barmeier, Adams*, Heller*	2	Illinois	Possessing ducks in storage in close season
Barmeier, Adams*, Heller*	1	"	Possessing waterfowl in storage in close season
Barmeier, Kuhn*	2	Missouri	Hunting ducks in close season
" "	3	"	Hunting and possessing ducks in close season
Brownlow*	1	California	Killing ducks in excess of daily limit
Johnson	3	Louisiana	Killing snipe in close season
Linebaugh	1	Kentucky	Killing a loon
Riddick	1	Arkansas	Killing a goose in close season

Upper Mississippi Bird Refuge Cases Reported during May

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Steele, Hall*, Lawrence*	3	Iowa	Trapping muskrats on closed area

Upper Mississippi Bird Refuge Cases Terminated during May

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Steele, Hall*,	2	Iowa	Trapping muskrats on closed area	\$25 and costs of \$20.75 each

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\* U. S. Deputy game warden

Treaty-Act Cases Terminated—Reports Received during May

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier	1	Missouri	Killing ducks from a motor boat; killing a wood duck	\$10
Barmeier, Adams*, Heller*	1	"	Killing a duck in close season	\$100
Barmeier, Davis*, Taft**	1	"	Killing a duck in close season; possessing a grebe	\$10
Barmeier, Kuhn*	2	"	Hunting and possessing ducks in close season	\$25 each
" "	2	"	Hunting and possessing ducks in close season	\$100 each
Branchaud	2	Dist. Columbia	Killing ducks in close season	\$10 each
Brownlow*	1	California	Killing ducks in excess of daily bag limit	\$25
Charlton, Lettett*, McDonough*	1	Michigan	Selling ducks	30 days in jail - suspended
Clarkson, Johnson	1	Texas	Selling ducks	\$10
Harris*, Jamieson**	1	Arkansas	Killing and possessing ducks in close season	\$5
Hoffman	1	Alabama	Hunting wood ducks	\$25
"	1	"	Hunting doves in close season	\$5
Hoffman, Adams*	7	"	Killing and possessing robins	\$5 each
Johnson	3	Louisiana	Killing snipe in close season	\$10 and costs each
Johnson, Doucet*, Woods*	1	"	Selling ducks	\$20
Kidd*	1	Virginia	Offering a goose for sale	\$25
Linebaugh	1	Kentucky	Killing a loon	\$10
Merovka	1	Arkansas	Hunting ducks in close season	\$15
Merovka, Cummings*	1	"	Offering for sale and selling ducks	\$15
Riddick, Merovka	3	"	Hunting ducks after sunset	\$5 each
Roahen	2	Missouri	Hunting ducks in close season	\$10 each
Shaver	2	South Dakota	Killing ducks after sunset	\$25 each
Shaver, Beals*, Rogalla*	1	Minnesota	Selling ducks	30-day jail sen- tence - suspended for 3 years
Steele, Lawrence*	2	Iowa	Possessing wood ducks	\$20 and costs of \$20.70 each
" "	3	"	Killing and possessing wood ducks	\$25 and costs of \$20.75 each
Whitehead	3	Georgia	Possessing wood ducks	\$10 each
Whitehead, Carter*	1	"	Killing and possessing a duck in close season	\$100
" "	4	"	Killing and possessing wood ducks	\$10 each

\* U. S. Deputy game warden

\*\* Deputy State game warden





# THE SURVEY

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Vol. 12

Washington, D. C., July 31, 1931

No. 7

## GENERAL NOTES

Chief Visits Aleutian and Pribilof Islands.--After spending several days in Juneau at the offices of the Alaska Game Commission, Mr. Redington left early in July for the Aleutian and the Pribilof Islands, where with Commissioner Henry O'Malley, of the Bureau of Fisheries, and the special Senate Committee on Wild Life Resources, he inspected the Pribilof fur-seal herds, conditions affecting blue-fox farming, and other wild-life matters.

Confer with Canadian Officials.--Mr. Henderson and Dr. W. B. Bell left Washington on July 23 for Ottawa, Canada, where they conferred further with Dominion officials on measures to be taken for the solution of the waterfowl problem which has arisen as a result of the long-continued drought in the northern Plains States and Prairie Provinces. After the conference Mr. Henderson left for points in Wyoming, Utah, and Washington to inspect work of the Bureau and to confer with cooperators. Doctor Bell returned to Washington from Ottawa.

Appointed Assistant Game Officer.--Robert W. Williams, deputy game conservation officer of the Bureau, with headquarters at Tallahassee, Fla., was transferred to Washington and promoted effective July 11 to the position of assistant United States game conservation officer to fill the vacancy caused by the transfer last March of Talbott Denmead to the Bureau of Fisheries, Department of Commerce.

For the past 30 years Mr. Williams has been actively interested in game conservation and legislation for the protection of wild life. From 1902 to 1907 he served as game-law assistant in the Washington office of the Bureau. During this time he was author of a Biological Survey bulletin on "Game Commissioners and Wardens--Their Appointment, Powers, and Duties," and of a circular on "Game Protection in Florida." In addition, he prepared an article for the 1907 Yearbook on "The Game Warden of To-day," and was coauthor of all the annual Farmers' Bulletins on the game laws published from 1903 to 1906.

Since his graduation from the Northern Indiana Law School, at Valparaiso, Ind., Mr. Williams has had extended legal experience both in private practice and in the Department. In 1902 he was admitted to practice before the bar of the United States Supreme Court. From 1907 to 1929 he was connected with the Office of the Solicitor of the Department as attorney and assistant solicitor; and was Solicitor from April 1, 1920, to October 7, 1929. During the last ten years he has assisted in drafting many of the Federal wild-life conservation laws.

Legal work and interest and experience in game conservation both in Washington and in the field have combined to qualify Mr. Williams for the new position. Since 1929, as deputy game conservation officer, he has supervised the bird reservations in Southeastern United States, has assisted Federal game protectors in that section in enforcing the migratory-bird treaty-act regulations, and has cooperated with State officials and wild-life organizations in conservation programs.

Secretary to the Chief Transferred.--Thos. E. Jacoby, secretary to the Chief since 1923 and an employee in the administrative offices since 1916, was promoted to the position

of administrative assistant in the Division of Game and Bird Conservation, effective July 3. He was succeeded by Mrs. Elizabeth O. Jacoby, who returns to the administrative offices after two and a half years service as clerk-stenographer in the Division of Predatory-Animal and Rodent Control.

Arranges for Bureau Badges.--In Waterbury, Conn., on July 9 E. J. Thompson, assistant in operations, interviewed a low bidder on furnishing standardized badges approved for the use of Bureau employees. Mr. Thompson explains that there are to be four badges differing only in the wording used. On the badge to be used generally there will be "United States," "U. S. Department of Agriculture," and "Biological Survey." Badges for enforcement officers will carry the additional words "Game Protector," "Deputy Game Protector," or "Reservation Protector," as the case may be.

Resigns.--Morris Troshinsky, an assistant messenger in the Washington office, resigned on July 6, 1931, to enter private business.

Appointment.--George S. Norris has been given a temporary appointment as junior messenger, effective July 11.

Official publications received during the month were:

"Hints on Bobcat Trapping," by Stanley P. Young. Leaflet No. 73. Dated, June; received, July 2.

"The European Starling in the United States," by E. R. Kalmbach. Farmers' Bulletin 1571, revised. Dated, June; received, July 7.

"The United States Rabbit Experiment Station." Lantern Slide Series 268. Dated March 1; received, July 9.

"Hints on Raising Squirrels." Leaflet Bi-526, revised. Dated, June; received, July 16.

"Suggestions on Trapping Wolves and Coyotes in Alaska," by Harlan H. Gubser. Leaflet Bi-1152. Received, July 20.

Radio Talk.--Under the auspices of the Rod and Stream Department of the Washington, D.C., Star, Frederick C. Lincoln will give a radio talk on the conservation of waterfowl and other birds, from Station WMAL at 5.30 p.m., Thursday, August 6.

#### BIOLOGICAL INVESTIGATIONS

Inspects Waterfowl Areas.--Doctor Bell returned to Washington on July 22, after his extended trip to study waterfowl conditions in the northern Plains States and in the Prairie Provinces of Canada.

Studies Life Zones in California.--Vernon Bailey left Washington on July 2 to conduct studies of animal life and life zones in the Sierra Nevada of California. He expected to join members of the Sierra Club and with them to cover the higher parts of the mountains east of Yosemite National Park. At the conclusion of his work in California, Mr. Bailey will resume his investigations in the Grand Canyon country of Arizona.

Returns from Military Duty.--E. A. Goldman, major in the Sanitary Reserve Corps, returned to Washington, July 20, from Carlisle Barracks, Pa., where, in accordance with orders of the War Department, he spent two weeks in training.

Crossbred Reindeer Show Increase in Size.--In his annual report, L. J. Palmer, in charge of the Reindeer Experiment Station, at College, Alaska, states that the cross-

breeding experiments being conducted with woodland caribou and the reindeer on Nunivak Island are producing animals of increased size and weight. From 50 to 100 pounds have been added to the weight of the animals resulting from the cross.

Musk Oxen Readily Handled.---Mr. Wimer also reports that the introduced musk oxen are successfully worked as a herd, being driven more readily and with less difficulty than the reindeer. Three digestion tests, two with alfalfa hay and one with lichens, he reports, were completed this spring.

Control Leader Transferred to Biological Investigations.---Effective July 1, Luther J. Goldman was appointed an associate biologist of this Division to take charge of field investigations of migratory waterfowl in the Rocky Mountain and Pacific Coast States with headquarters at Ogden, Utah. In the years 1902-1904 and again in 1914-15, Mr. Goldman was employed by the Survey as a field expert in this Division. Since 1915 he has held various assignments under the Division of Predatory-Animal and Rodent Control. At the time of his transfer he was leader of predatory-animal control, with headquarters at Pocatello, Idaho. Some of his earlier work, however, was with waterfowl, and because of his long experience with western conditions, he is considered well qualified for his new assignment.

Visits Cobb Island.---Dr. O. L. Austin, jr., visited Cobb Island, Va., early in July and banded 2,650 laughing gulls, 550 black skimmers, a number of gull-billed, common, Forster's, and least terns, and some clapper rails. He states that the colony of gulls occupies fully 10 square miles of salt marsh, and that on this area there are 5 to 25 nests to the acre. With a good season, he believes that two men could band 10,000 of these birds there. Doctor Austin reports gratifying progress with his waterfowl work, and believes that he has laid the foundation for extensive duck banding during the coming fall and winter.

Long-time Migration Observer Dies.---Ferdinand F. Crevecoeur, of Onaga, Kans., for more than forty years a volunteer migratory-bird observer for the Biological Survey, died April 7, 1931, at the age of 69. Mr. Crevecoeur was one of the eight observers whose noteworthy service to the Bureau was recently acknowledged by special testimonials signed by the Chief. A brief obituary notice appears in Science for May 8, 1931, page 488.

Progress on New Mammal Gallery.---Dr. H. H. T. Jackson reports the construction work progressing nicely on the new gallery for the Biological Survey and the National Museum collections of mammals in the National Museum. When this is completed, the available space will have been nearly doubled and thus will provide more adequate facilities for the storage and study of the collection.

On Vacation.---E. A. Preble left Washington on July 4 for a month's vacation at Osage, N. H.

Recovers from Illness.---Richard N. Crack, of the bird-banding section, has returned to the office after an absence of about three weeks, having undergone an operation for appendicitis.

#### FOOD HABITS RESEARCH

Studies Game-Bird Conditions.---During the greater part of the past month Wallace B. Grange has been participating in studies of game birds in Arizona and New Mexico.



Appointment at Denver.--Franklin H. May, a graduate of Cornell University, has been appointed junior biologist, effective July 1, to assist C. C. Sperry in the Denver food-habits laboratory, where studies will be made of the stomach contents of mammals.

Survey Food Resources for Wild Fowl.--Neil Hotchkiss, with Lawrence A. Koehler, who was appointed to assist him during the summer, is now engaged in a survey of the food resources for wild fowl in the marsh and lake areas of Wisconsin. A. C. Martin has been similarly employed on proposed Federal migratory-bird refuge sites in Florida, Louisiana, and Tennessee.

Continues Studies of Western Duck Sickness.--E. R. Kalmbach left Washington late in June for his temporary headquarters at Klamath Falls, Oreg., where he will continue his investigation of duck diseases. En route he stopped at Minneapolis to confer with collaborators and at Denver to assist C. C. Sperry in connection with the new laboratory.

Investigates Bird Poisoning.--Clarence Cottam left July 21 for Mitchell and other points in South Dakota, where he made investigations of reported poisoning of birds as a result of grasshopper and rodent control measures.

#### FUR RESOURCES

Attends Meeting of Fur Farmers.--Mr. Ashbrook attended a meeting of the California Fox and Fur Farmers Association, June 20 and 21, in the San Bernardino Mountains.

Returns from Western Trip.--On June 30, after several weeks spent at the Rabbit Experiment Station, at Fontana, Calif., in planning for the new fiscal year, Mr. Ashbrook accompanied by John W. Meyer, director of the station, left by automobile for Los Angeles and other points in southern California to visit rabbit farms and feeding stations that have been developed for holding rabbits midway between marketing points. At the completion of this tour, Mr. Meyer returned to Fontana and Mr. Ashbrook continued his trip to San Francisco, Seattle, Denver, and Chicago, and returned to Washington on July 20. In Denver he attended a meeting of the Rocky Mountain Fox and Fur Breeders Association.

4-H Rabbit-Club Boys Enjoy Outing.--A special week-end camp was held during the last week in June in the San Bernardino mountains for leaders in rabbit-project activities. There were about 85 boys and girls at the camp, representing those who had successfully completed projects in the county. The Fontana group was under the personal direction of John W. Meyer and Allen E. Suitor of the Rabbit Experiment Station.

To Use Rabbits in Dairy Experiments.--The Rabbit Experiment Station at Fontana recently shipped 20 rabbits to the U. S. Dairy Experiment Station at Beltsville, Md., to be used for nutritional studies in connection with related studies of dairy cattle.

Saratoga Springs Cold-Storage Rooms to Be Finished Soon.--Dr. Karl B. Hanson, in charge of the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., reports that the cold-storage rooms being constructed under the emergency appropriation will be completed as soon as the electrical refrigerating unit is installed. Engineers specializing in refrigeration, says Doctor Hanson, have inspected the job and commented favorably on the workmanship.

New Pens Afford Martens More Exercise.--The marten pens being constructed at the Fur-Animal Experiment Station under the emergency program are nearly completed and are now being covered with wire netting. Larger than the old type, these pens will make it possible for the martens to exercise more freely.

Silver Foxes Arrive at Fur Station.--A pair of silver-black foxes of the Fromm-Neiman strain purchased early in June arrived at the Fur Animal Experiment Station in good condition. These animals will be used in breeding experiments with Alaskan and Prince Edward Island silver foxes.

Visiting Season at Fur Station.--Doctor Hanson reports that the visiting season at the Fur-Animal Experiment Station has begun and that already there have been many interested visitors from New York State.

#### DISEASE INVESTIGATIONS

Veterinary Association Interested in Wild Life Diseases.--Doctor Shillinger recently appeared on programs of the Maryland State Veterinary Medical Association and of the Virginia State Veterinary Medical Association. He answered a number of questions concerning the diseases of fur animals and the progress being made throughout the country in fur-animal production under controlled conditions.

Analyses Indicate Swans Died of Poisons.--The Food and Drug Control Laboratory reports that lead, copper, and zinc, and traces of nickel and iron were found in the viscera of the swans that died on the Coeur d'Alene River near Harrison, Idaho, last spring. Amounts found were not very great, but it is probable that one or several of these metals caused death. A considerable amount of mine and smelter waste finds its way into the Coeur d'Alene, and this probably endangers the wild life of the river. The Bureau of Fisheries has requested this Bureau and the Bureau of Mines to cooperate with it and local interested parties in a thorough investigation of the situation during the latter part of this summer.

Fox Diseases Prevalent.--Activities at the Fur-Animal Disease-Investigation Field Station in Minnesota have been increased, and 50 red foxes have been purchased for experiments in connection with outbreaks of infectious diseases in the Northern and Central States. Several ranches have reported losses.

Cooperator Presents Papers to Biologists.--Dr. R. G. Green, cooperator with this Bureau on diseases of fur animals, presented three papers at the Canadian Biological Conference, at Matamek River, Quebec, during the week of July 13 to 18.

Game Bird Investigations.--Quail-disease investigations at Richmond, Va., have revealed cases of blackhead and coccidiosis in quail on the game farms in that vicinity. Losses so far have been slight, and every effort is being made to prevent widespread infection. In connection with this problem, Dr. Frank D. McKenney, Bureau quail-disease investigator at Richmond, spent several days in Washington and at the Maryland State Experiment Station making a study of the Department's literature and conferring with Department and State workers on diseases in birds.

## PREDATORY-ANIMAL AND RODENT CONTROL

Leaves for Extended Field Investigations.--On July 10 Mr. Young left Washington for the Western States. He plans to spend some time in New Mexico investigating conditions on Indian reservations, later to attend the meetings of the Colorado Wool Growers' Association and the Wyoming Wool Growers' Association, and to attend hunters' conferences in Wyoming, Utah, and Washington.

Bobcat Leaflet Issued.--Leaflet No. 78, Hints on Bobcat Trapping, prepared by Mr. Young, was issued during June. This leaflet, published as the result of a wide demand, outlines trap-setting methods and describes the use of scents and lures.

Information Prepared for Boys' and Girls' Club Camps.--G. C. Oderkirk, leader of rodent-control work in Indiana, Illinois, and Wisconsin, has recently prepared a "primer" on the common rodents of that region for the use of leaders of boys' and girls' club camps. Prepared in a very readable style, Mr. Oderkirk's manual should be of considerable help in acquainting boys and girls with the common rodents of their region.

Roy Fugate, junior biologist of the Oregon district, recently spent two days at the Oregon State Agricultural College holding rodent discussions with 4-H Club boys. Five classes were held with a total attendance of 270. One classroom discussion was broadcast over station KOAC. The boys in attendance showed much interest in this work.

New Rodent District Organized.--On July 1 a new rodent control district, with headquarters at Agricultural Extension Service, University of Florida, Gainesville, Fla., was established in cooperation with the Extension Service of the State of Florida. It is planned that the district will later include Georgia also. Control operations in the district will be concerned largely with the black, the brown, and the cotton rats, the pocket gopher, and the land crab. Carlyle Carr of San Leandro, Calif., was appointed leader of the new district. Mr. Carr was in charge of the rodent-control work in Indiana, Illinois, and Wisconsin from 1923 until 1925, when he resigned to accept a position with a commercial company. During the three years he served with the Division he gained a wide and favorable reputation throughout the Middle West. He is a graduate of the University of Wisconsin.

Reorganization in Idaho District.--When Luther J. Goldman, formerly leader of predatory-animal control work in Idaho, was transferred to the division of Biological Investigations, effective July 1, T. B. Murray was given charge of both the predatory-animal and the rodent control work in that State. Mr. Murray entered the service of the Bureau in 1918 as a rodent-control assistant and continued in that capacity until July 1, 1928, when he became leader of rodent-control work in Idaho following the transfer of W. E. Crouch to the Washington office. Mr. Murray has a wide acquaintance in Idaho and is well qualified to assume the added responsibilities in connection with the predatory-animal work.

Mr. Goldman, leader of the predatory-animal control work in Idaho since 1914, has built up and improved the organization in his district. The best wishes of the entire Division of Predatory-Animal and Rodent Control go to Mr. Goldman in his new duties.

Heavy Wolf and Coyote Concentrations.--A. E. Gray, leader of the predatory-animal work in Oklahoma and Arkansas, recently reported that 22 wolves were taken during the past fiscal year on an area less than 10 miles square in Creek County, Okla.

Leader Louis Knowles of South Dakota advises that in the same period 50 coyotes were taken in Nebraska on an area constituting approximately half a township and including part of the Niobrara game reservation, maintained by the Biological Survey.



Rats Destroy Birds and Grain.--In response to an appeal from Oren D. Steele, United States Game Protector, of Cambridge, Md., F. N. Jarvis, assistant in the eastern control district, recently investigated the damage rats have done to grain fields and game birds on Barren Island, Md., a Chesapeake Bay Island maintained as a private game preserve. He found that an infestation of rats had destroyed two plantings of corn on a 10-acre field and that a third planting was successful only because an adjoining field of wheat heading out attracted the rats away from the corn. At the rat burrows he also found piles of egg shells and bones and feathers of birds. Owing to the abundance of food available for the rats, a complete clean-up seemed impracticable. About 10 pounds of bait treated with powdered red squill was prepared, however, and about half of the baits were taken by the rats. A thorough clean-up will be attempted in the fall when fresh food is less plentiful.

Appointment.--On July 16, Mrs. Beulah Ostendorph was appointed clerk-stenographer in this division, having been transferred from the Bureau of Home Economics.

McCammon Bait-Mixing Station Now Separate Unit.--Funds for the central bait-mixing station, at McCammon, Idaho, have been set up as a separate unit, effective July 1. The mixing station, formerly operated in connection with the Idaho Rodent-control District, was operated during the fiscal year 1930-31 as a unit of the Control Methods Research Project. This change is in accordance with recommendations adopted at the conference of field workers of the Division at Denver. Paul T. Quick will continue in charge of the bait-mixing operations. A new flaking machine, grain separator, and bag piler have recently been purchased to replace worn-out equipment.

#### LAND ACQUISITION

Detailed to Washington.--Albert J. Rissman and William T. Krummes are continuing on detail to the Washington office. Mr. Rissman recently visited Annapolis, Md., to obtain land grant data.

Makes Inspection Tour.--On July 25 Arthur A. Riemer left Washington for the Upper Mississippi Refuge and later the Crescent Lake Refuge, in Nebraska, for an inspection of the surveys being made on these areas.

Progress of Parties.--Rudolph O. Gustafson and Peter J. Van Huizen have completed work on the Okefenokee Swamp in Georgia and are now examining the Kankakee Marsh in Indiana.

Carey H. Bennett and Howard J. Sargeant, who completed their examination work in Colorado and have since been at Benton Lake Refuge in Montana to determine methods of increasing the water supply for the refuge, are now at Burns, Oreg., assisting C. W. Pecore on the Malheur Reservation.

Upon completion of the survey work on the Elk Refuge under the emergency construction measure, Charles S. Cook proceeded to Winona, Minn., with Robert C. Kirchner, to undertake surveying, monumenting, and posting of the boundaries of the Upper Mississippi Refuge.

J. Ralph Campbell and James W. Whitehead, who were appointed junior engineering aids, on June 22, have, with Lawrence K. Hayes, been detailed to assist Mr. Cook. Mr. Whitehead attended the Virginia Polytechnic Institute and majored in civil engineering. He has had some previous Government experience under temporary appointment with the Geological Survey. Mr. Campbell has been a civil-engineering student at the University of Akron (Ohio) and has had experience in construction and topographic work.

Albert Smith, jr., is now engaged on the survey of the Crescent Lake Refuge in Nebraska, including the monumenting and posting of the boundaries. He is being assisted by Oswald E. Recroft, who had been temporarily detailed to assist Mr. Pecore on the Malheur Reservation, and Jack Y. Upham, junior engineering aid, who was appointed on June 23. Mr. Upham has had some previous service with the Geological Survey on temporary appointments.

Leave Washington for Field Work.--On July 27 David D. Pugh left Washington to begin work on surveying, monumenting, and posting the boundaries of the Swanquarter Migratory Bird Refuge, N. C.

Kenneth C. Kern, who has been in the Washington office for some time, will shortly undertake the survey of lands within the proposed Blackwater Refuge, Dorchester County, Md.

Texas Temperatures Torrid.--George D. Chittick and Paul T. Kreager, now on annual leave, report that the temperature in Texas where they have been engaged on the examination of proposed refuge areas has been around 110 degrees for some time.

#### GAME AND BIRD CONSERVATION

Reservations Suffer from Drought.--At the Elk Refuge, Wyo., owing to the very dry season and the consequent lack of irrigation water, it was necessary to begin harvesting the hay early in July. Apparently the hay to be harvested on this refuge will not amount to more than 600 tons. With this quantity, however, in addition to that remaining from last year because of the mild winter, it is believed that there will be sufficient for the elk on the Jackson Hole feeding grounds next winter.

At Wind Cave Game Preserve, S. Dak., feed is becoming noticeably scarce; drought conditions prevail throughout the Black Hills region, and the situation is serious. Unless rain falls in the near future and the fall season proves to be open and unusually mild, a scarcity of cured grass for winter feed at this preserve is feared.

Very dry weather prevailed at Sullys Hill Game Preserve, N. Dak., until late in June, when rain fell, and on July 3 Protector Wesley D. Parker reported that more rain had fallen on that date than at any time since last summer. Pastures in this region have been eaten to the ground and in some places the roots have been pawed up by domestic stock, but the pasture at the preserve is still in good condition.

Niobrara Reservation, Nebr., and Lake Malheur Bird Reservation, Oreg., have also suffered because of the dry weather. At the National Bison Range, Mont., although there has been comparatively little moisture, the grass is in good condition. The animals have found grazing on the open range all the year and no feeding has been necessary.

Disorder among Mountain Sheep.--Game animals on the reservations are all reported to be in good condition with the exception of the mountain sheep on the National Bison Range. A number of the sheep on this area have been afflicted with a disease, the exact nature of which has not been definitely determined, though it is thought it may be due to the lack of some feed obtained in their natural ranges at higher altitudes but not found on the Bison Range. Twenty-two lambs, however, were born.

Improvements at Various Reservations.--Construction work made possible by funds provided by the First Deficiency Act for the unemployment relief program and improvements planned under the regular appropriation for maintenance of reservations have been completed as follows:

At the National Bison Range, Mont., a new game fence has been built extending from headquarters to the corral at the slaughter house. The slaughter house, which had remained unfinished for several years, has been completed with a cement floor and a cooling room. A barn containing 10 single stalls, a box stall, feed rooms, and harness rooms on the ground floor, and on the second a hay carrier system with storage for about 40 tons; a garage; a machine shed; and a bunkhouse containing six rooms and bath have been constructed. A water works system for fire protection, having a 21,500-gallon reservoir, and a drainage system for emergency protection have been installed. More than 2 miles of new trails have been built, and about half a mile of old trail has been repaired. The old barn, blacksmith shop, hide house, and a machine shed have been moved.

At Wind Cave Game Preserve, S. Dak., the garage, moved and remodeled, will house the lighting plant, five cars, mechanic's and blacksmith's shop on the ground floor, and a carpenter and paint shop and storage space for equipment on the second floor. A game fence, with an automobile gate, connecting the east and west game pastures across the highway so as to exclude cattle from the lake area and to facilitate the handling of buffalo, has been built. A bunkhouse, barn, and machine shed have been constructed, and the headquarters house has been entirely remodelled.

At the Elk Refuge, Wyo., a new barn has been built on the Izaak Walton League Addition, two machine sheds constructed, and the protector's house entirely remodeled, a furnace installed, and the building converted into a modern dwelling. Three and one-half miles of exterior fence on the refuge were rebuilt, 7,000 poles and bucksticks having been cut and hauled to the refuge for the purpose. About 20,000 feet of lumber were required for 160 moveable fence panels to be used for fencing haystacks against elk depredations. Considerable road surfacing work was also accomplished.

The most notable improvement on the Niobrara Reservation, Nebr., is the new quarters, with office space, recently completed for the use of the protector. Other improvements include a slaughter house of modern type, a capturing corral and wing fences, a new big-game fence, and four small houses for storing fire-fighting equipment. A contract has been let for the construction of a power line and the installation of electricity.

At Sullys Hill Preserve, N. Dak., a basement has been dug under the headquarters building and a furnace installed. Two new rest rooms and a field house for the accommodation of visitors have been built on the grounds, and the barn has been moved to a better location and a concrete floor put in. Contracts have been let for the installation of electricity and a water system, including the digging of a 250-foot well, and for the construction of a portion of the cut-off dam at Sweetwater Lake.

Seven miles of telephone line have been built at Lake Malheur Bird Reservation, Oreg., and a contract has been let for ditching at Big Lake Reservation, Ark., to improve the water supply at low stages.

Birds at the Bison Range.--According to reports received, Chinese pheasants and Hungarian partridges are increasing rapidly on the National Bison Range, and a great number of young birds have been hatched. There appears to be an abundance of small birds on this area, especially finches, robins, and bluebirds.

Visit the National Bison Range.--On July 11, a delegation of university people visited the National Bison Range. They were fortunate in being able to see the entire buffalo herd, several bull elk, and some deer. Of this party, one man was from London, England, two from New York, one or two from Pennsylvania, and the others from various other States.

Waterfowl Scarce on Belle Fourche Bird Reservation.--Fred C. Winkler, deputy reservation protector at Belle Fourche Reservation, S. Dak., reports that there are only about



half as many ducks on the refuge this year as there were a year ago, the shortage of water in northwestern South Dakota having caused most of the ducks to leave that part of the country. Water holes and creeks were dry early in the season and very few waterfowl nested in the region. Vegetation around the lake has dried up, and about half of the small trees are dead. The curlew is the only migratory bird that shows an increase in numbers this season.

New Cruiser for Upper Mississippi.--A new 28-foot, 11-passenger sedan type cruiser, to be used in fire protection and general inspection work, was delivered to the Upper Mississippi River Wild-Life and Fish Refuge on June 16. The boat has a 250-horsepower, 8-cylinder, V-type motor, and develops a speed of 40 miles an hour. Named the C. Hart Merriam in honor of the first chief of the Bureau, it made its maiden trip on June 19 from Winona, Minn., to Lansing, Iowa, at which place it participated in the three-day ceremonies held in connection with the dedication of the new Black Hawk bridge across the Mississippi River between Lansing, Iowa, and De Soto, Wis. In making the trip Superintendent R. C. Steele was accompanied by a party consisting of local conservationists and representatives of the press.

A Floating Boathouse on the Upper Mississippi.--Contract has been awarded for the construction of a steel catamaran to form the basis of a floating boathouse for use on the Upper Mississippi Refuge. Buoyancy for the structure will be supplied by twin steel pontoons, between which and at the open end will be a well of sufficient dimensions to permit a cruiser to be driven in for shelter and protection. Steel truss work will provide hoisting facilities to enable the cruiser to be raised out of the well inside the boathouse for the purpose of making repairs and for winter storage. The superstructure, or house, will be constructed under the direction of the superintendent of the refuge after the steel work has been completed and delivered. A workshop for the engineman will be provided at one end of the boathouse.

Recovers from Illness.--Miss Mabel A. McCann, senior stenographer in the Winona office, who underwent an operation for appendicitis on June 4, was able to return to duty on June 29.

Upper Mississippi Employees Enjoy Picnic.--On July 13, the employees of the Winona office and their families to the number of 28 enjoyed a picnic at Whitewater State Park, situated about 25 miles from Winona.

Mille Lacs Bird Reservation Posted.--Junior Forester Miller, of the Upper Mississippi Refuge, posted the Mille Lacs Bird Reservation in northern Minnesota in June. The refuge motor truck was used in transporting necessary posting materials from the Winona supply depot.

Trempealeau Bottoms Designated as a State Game Refuge.--Governor LaFollette of Wisconsin recently signed a bill providing for the establishment of a State game refuge in the Trempealeau Bottoms, an area subject to acquisition for the Upper Mississippi Refuge. For the past two or three years the Trempealeau Bottoms have been used as a fur and fish farm by a company operating under a license from the State of Wisconsin. During this time the area has been the subject of litigation in which sportsmen asserted a public right to hunt within the boundaries of the fur farm as long as they remained upon navigable waters, and they contended that the waters within the area were navigable. The Supreme Court of Wisconsin, however, adhered to a former decision that the waters were not navigable and

thus upheld the right of the fur-farm company to bar the entry of hunters and others from the area. The State has now, by legislative enactment, declared the area to be a game refuge in which the taking of wild life other than fur bearers will be prohibited. Should the fur-farm company carry its case to the higher courts, a new angle to the Trempealeau controversy would be presented, of considerable interest to conservationists.

Importations.--Among the rarer birds imported during the month were 2 francolins (Francolinus francolinus) from Singapore and 7 organists (Euphonia violacea) from Venezuela.

Importer a Visitor.--Ellis S. Joseph, one of the largest importers of foreign birds and mammals in New York, visited the Survey on July 8. Mr. Joseph has captured and imported many rare specimens from Australia and reports that on one occasion he shipped a consignment of 18,000 parakeets.

Resumes Inspection at New York Port.--B. S. Bowdish, senior inspector of foreign birds and mammals in New York, resumed the work of inspection at that port on July 1, when Lee S. Crandall, who has been on duty since January 1, left for his summer vacation.

Woman Collector Addresses Academy of Sciences.--Mrs. M. E. Davidson, inspector of foreign birds at San Francisco, the first woman in the Survey actually to collect in the field, gave an illustrated lecture on "Collecting in Chiriqui" before the monthly meeting of the California Academy of Sciences on July 1.

Inspector Writes Report on Galapagos Avifauna.--Harry S. Swarth, inspector of foreign birds at the port of San Francisco, is the author of a 300-page report on the avifauna of the Galapagos Islands, just published as an Occasional Paper by the California Academy of Sciences. This work, based on a collection of birds received by the academy in 1906, is one of the most comprehensive ever issued on the birds of these islands. Last year the author visited England for the purpose of examining types of the various species in the British Museum and in the Rothschild Museum at Tring. In addition to notes and discussion of all the species reported from the islands, the report contains a historical introduction and an extended bibliography. Some of the maps with which the report is illustrated were made by Mrs. Mary E. Davidson, and a chart and several graphs by Miss Margaret W. Wythe, who also are inspectors of foreign birds at San Francisco.

Personnel Notes.--Game Protector L. A. Branchaud returned to his headquarters, Washington, D. C., on June 29, after spending nearly four months on the Niobrara Reservation, Nebr., where he had charge of the construction already noted.

Game Protector Albert Stadlmeir, of Pleasantville, N. J., has been assigned to duty on the Bureau's motor boat stationed at Solomons Island, Md., for about a month.

Game Protector E. B. Whitehead has been assigned to McClellanville, S. C., to guard the new Cape Romain Refuge near that point against trespass by persons gathering turtle eggs or interfering with birds nesting on the refuge. This area was recently acquired as an inviolate migratory bird refuge.

Injured.--Game Protector O. D. Steele was injured on July 3. While moving an outboard motor from one end of the motor boat Curlew to the other, he slipped, and in trying to save the motor from falling wrenched the muscles of his back. He was confined to his bed for several days but is now able to perform light duties.

Eight Cases Terminated on Upper Mississippi Refuge.--Eight cases involving violations of the fishing laws on the Upper Mississippi refuge were terminated by the violators being fined the aggregate amount of \$280 plus costs of \$27.59, the sentence in some cases, however, being suspended. Evidence for the several cases was obtained by Rangers Lawrence and Hall and Deputy Rangers Berni, Miller, and Frerichs.

Migratory-Bird Treaty-Act Cases Terminated--Reports Received during June

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeler, Adams*, Miller*	2	Illinois	Hunting ducks in close season	\$15 and costs of \$25 each
Birsch, Steere**	4	North Carolina	Killing doves in close season	\$10 each
" "	2	" "	Killing doves in close season	\$25 each
Blackwell*	1	Illinois	Selling ducks	\$15 and costs of \$25
Charlton, Hard*	1	Ohio	Killing ducks in close season	\$10
Charlton, Harlow**	1	"	Killing and possessing a wood duck	\$10
Charlton, Kidder*, Knowles**	1	Michigan	Killing and possessing ducks in close season	Six months jail sentence suspended, placed on probation for 1 year
Clarkson	1	Texas	Possessing willets	\$5
"	1	"	Killing a dove from automobile	\$5
Creech	1	Illinois	Possessing ducks in excess of daily limit	\$1
Harris*	1	"	Hunting and possessing wood ducks	\$50 and 40 days in jail
Jans*	1	"	Possessing parts of nongame birds	\$20
Johnson, Martin*	1	Louisiana	Possessing a mourning dove in close season	\$10
Johnson, St. Germain*	2	"	Possessing ducks in close sea- son	Sentences suspended for 5 years
Riddick	2	Arkansas	Hunting ducks in close season	\$10 each
Roahen	1	Illinois	Killing a duck in close season	\$25
Smith	2	Maine	Possessing ducks in close season	\$25 each
Thomason*	2	Arkansas	Possessing ducks in close season	\$50 each

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\* U. S. Deputy game warden

\*\* Deputy State game warden



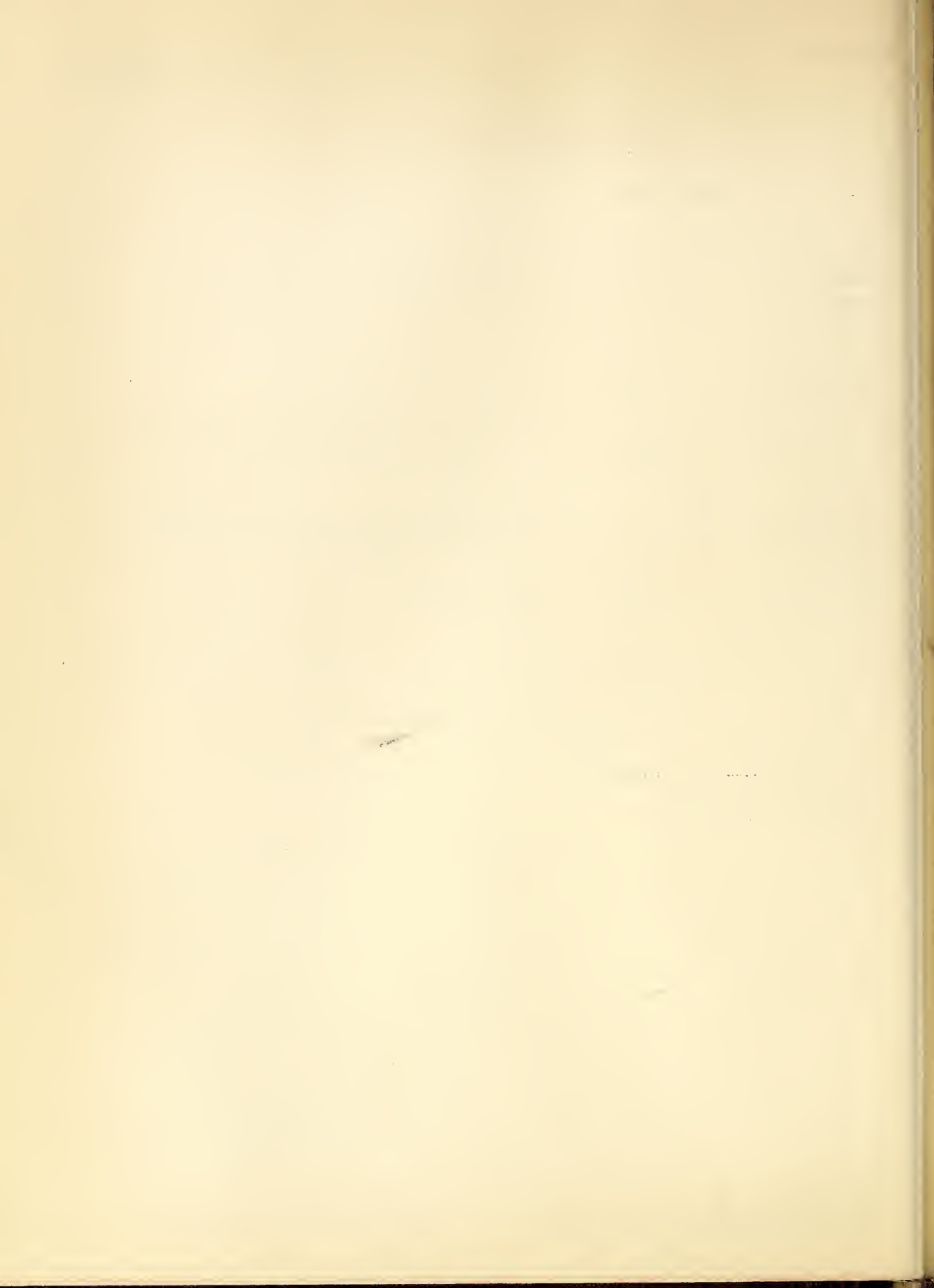
Treaty-Act Cases Reported during June

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Adams*, Davis*	3	Illinois	Possessing ducks in close season
Barmeier, Adams*, Davis*	1	Kentucky	Hunting ducks in close season
Barmeier, Adams*, Davis*	1	Illinois	Hunting ducks in close season
Barmeier, Adams*, Heller*	2	Kentucky	Hunting ducks in close season
Barmeier, Richmond*	2	Illinois	Killing and possessing a duck in close season
Charlton, Hard*	1	Ohio	Killing ducks in close season
Johnson, Foolkes**, Theroit**	1	Louisiana	Possessing two yellow-crowned night herons
Johnson, Henler*	2	"	Hunting ducks prior to half an hour before sunrise
Johnson, Martin*	1	"	Possessing a mourning dove in close season
Shaver, Lawrence*, Miller*	1	Wisconsin	Killing ducks in close season
Shaver, Vogel*	1	Minnesota	Selling ducks

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\* U. S. Deputy game warden

\*\* Deputy State game warden



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## GENERAL NOTES

Make Field Inspections and Attend Conferences.—After leaving the Pribilof Islands Mr. Redington visited Kodiak Island in company with Senators Norbeck and Walcott, of the Senate Committee on Wild Life, for the purpose of obtaining information in regard to the brown bear. From Kodiak he went to Seward and Anchorage and by means of an airplane observed conditions on Kenai Peninsula. Here the party were fortunate in seeing a number of large Kenai moose in their native habitat. Mr. Redington then returned to Washington, D. C., making brief stops at Juneau, Prince Rupert, Vancouver, and Seattle. At these points he conferred with officials and others interested in conservation. Mr. Redington left Washington again on August 22 for the West to attend a meeting of the Senate Committee on Wild Life Resources in Portland, Oreg., August 27. Since then he has visited the National Bison Range, in Montana, and has conferred with various individuals and organizations interested in wild-fowl conditions.

While in the West Mr. Henderson attended the meetings of the Survey's hunter force at Cheyenne, Wyo., Fish Lake, Utah, and on the Wenatchee National Forest, Wash. He also spent several days at the Bear River Migratory Bird Refuge, Utah, and attended the annual meeting of the Wyoming Wool Growers Association at Rawlins. At the Jackson Hole Elk Refuge he conferred with the protector, A. P. Nelson, and with O. J. Murie. After leaving Jackson, he proceeded to Seattle, where he met Mr. Redington on his return from Alaska and discussed with him the wild-fowl situation. En route to Washington Mr. Henderson spent a day at St. Paul, Minn., where he conferred with officials of the State Game Department and others with whom the Bureau is cooperating in Minnesota.

Season on Waterfowl Reduced to One Month.—Because of the disastrous conditions caused by prolonged drought, the season for hunting ducks, geese, brant, and coot throughout the United States and Alaska was reduced to one month by an amendment to the migratory-bird treaty act regulations approved by the President on August 25.

In the northern part of the country, except Alaska, the season on ducks, geese, brant, and coot under the new regulations will open October 1, and in the South November 16, except in Florida, where it will begin November 20. The seasons on Wilson's snipe, or jacksnipe, sora, woodcock, and doves have not been changed.

Drought on the principal wild-fowl breeding grounds in northwestern United States and in western and southwestern Canada has meant the disappearance of sloughs and marshes from much of this great region. As a result the birds have been unable to rear normal numbers of young, and the annual flight of ducks and geese this fall is expected to be the poorest on record. Conditions observed during investigations conducted throughout the breeding period by United States and Canadian representatives over areas in southwestern Manitoba, southern Saskatchewan as far north as Saskatoon, and in Alberta westward to the Rocky Mountains and northward to Edmonton and Lake Athabasca, convinced officials of the Biological Survey and of Canada that irreparable damage would result if measures were not adopted at once to reduce the kill and to preserve an adequate stock of birds for breeding. Similar investigations throughout the northwestern part of the United States produced equally



discouraging reports of disaster to the wild fowl, and investigations pushed by the Canadian Government even into remote subarctic regions failed to verify the belief of some that the ducks driven from their regular haunts by the drought had gone farther north to breed.

It has been emphasized that the decrease of wild fowl will be general throughout this country during the fall and winter months, and that concentrations in scattered local areas should not be regarded as altogether encouraging manifestations, since the birds will be compelled to resort to the restricted areas where water and food conditions are favorable.

The President also issued a proclamation calling upon "all game and conservation officials, State and local, all members of game-protective organizations, landowners, sportsmen, and public-spirited citizens generally to lend their cooperation to effect full observance." The text of proclamation follows:

"The long-continued and severe drought of the past two years has inflicted not only economic hardships by seriously curtailing crop and stock production, but also has resulted in an emergency condition as regards the present and future safety and abundance of the waterfowl of the continent. In large areas of the United States and Canada, through lack of the water on breeding grounds essential to rearing the young birds, the drought has entailed widespread destruction among the former hordes of the wild fowl that migrate to our several States.

"This devastation has constituted so great a menace to our wild-life resources and to their future enjoyment by our people as to impel the Secretary of Agriculture to adopt a regulation compatible with the Migratory Bird Treaty Act (40 Stat. 755), whereby during the coming fall there will be an open hunting season on these birds of only one month.

"NOW, THEREFORE, I, HERBERT HOOVER, President of the United States of America, do hereby urge that all persons take cognizance of this emergency, and I call upon all game and conservation officials, State and local, all members of game-protective organizations, landowners, sportsmen, and public-spirited citizens generally to lend their cooperation to effect full observance of this regulation, to the end that adequate numbers of waterfowl may return to their breeding grounds next spring and that there may be no repetition of the calamity of extermination that has already overtaken some species of our American birds."

Bird Refuges Closed to Hunting.--In line with the Presidential proclamations shortening the season on ducks, geese, brant, and coot to 30 days and calling for cooperation in the conservation of waterfowl, the Secretary of Agriculture on August 28 revoked orders that heretofore permitted hunting on Federal bird reservations at Salt River, Ariz.; Big Lake, Ark.; Tule Lake, Calif.; Deer Flat, Idaho; Nine Pipe and Pablo, Mont.; Rio Grande, N. Mex.; and Cold Springs, Oreg. Of the 81 reservations established by Executive orders and placed under the administration of the Biological Survey, these eight are the only ones on parts of which hunting had been permitted. The new series of refuges being established under the migratory bird conservation act of 1929 will be inviolate sanctuaries.

Doctor Fisher's Retirement Ends Longest Service in Bureau.--Dr. Albert Kenrick Fisher was retired on August 31, 1931, after being continuously connected with the Biological Survey from the time of its establishment on July 1, 1885. He had completed a service in the Department of Agriculture of 46 years and 2 months--the longest in the history of the Biological Survey.

As principal assistant to Dr. C. Hart Merriam, first Ornithologist of the Department, Doctor Fisher's first work had to do with bird migration. Later he undertook investigations of the food habits of birds of prey, a subject on which he had done considerable work before

entering the government service. The results of these studies were published in bulletin No. 3, "Hawks and Owls of the United States," which has contributed greatly to a proper understanding of the beneficial and harmful habits of these birds.

Doctor Fisher did considerable field work in many parts of the United States in the study of mammals, birds, and reptiles. He was a member of the Death Valley Expedition of 1891, of the Harriman Alaska Expedition of 1899, and of the Pinchot South Seas Expedition of 1929. On these expeditions and his many other field trips he assisted in determining the geographic distribution of many species, in working out details of the life zones, and in collecting scientific specimens. From July, 1902, to March, 1906, he served as Assistant Chief. In 1906, after the Survey became a bureau, Doctor Fisher was placed in charge of the newly organized Division of Economic Investigations, in which position he remained until relieved of active administrative work in 1927. During the past three years he has continued research on the food habits of hawks and owls, which had been interrupted by his administrative duties, and has worked on a revision of the publication on the relation of these birds to agriculture and game.

Numerous forms of animal life, including mammals, birds, reptiles, amphibians, mollusks, and insects, have been named in honor of Doctor Fisher. He was a founder of the American Ornithologists' Union, established in 1883 as the first country-wide organization of bird students, and he served as its president from 1914 to 1917. He is also an honorary member of the Cooper Ornithological Club, the Delaware Valley Ornithological Club, and the International Association of Game, Fish, and Conservation Commissioners, and a member of the Baird Ornithological Club, the Biological Society of Washington, the Boone and Crockett Club, and other scientific and conservation organizations. He now becomes a zoological collaborator of the United States National Museum and will thus be able to continue the studies that have been of lifetime interest to him.

His friends in the bureau have planned an informal gathering at a time when they will present him with a memorial.

Official publication received during the month: "How to Attract Birds in the East Central States," by W. L. McAtee. Farmers' Bulletin No. 912, revised. Dated August; received, August 18.

Radio Talk on Conservation.--Mr. Henderson will deliver a radio talk, "An Appeal to Sportsmen," on the National Farm and Home Hour program at 1 o'clock, September 17. The program will be broadcast from Station WRC and throughout the country from other stations associated with the National Broadcasting Company.

California Official Visits Bureau.--Dudley Moulton, director of the California Department of Agriculture, visited the bureau on August 27 and discussed various cooperative projects of the Biological Survey in California.

Uniform Adopted.--The bureau has adopted for the use of its employees in all branches of the service a uniform to be worn by all those desiring to identify themselves as Biological Survey employees. The color of the fabric used is a special shade of gray, and a complete suit with extra breeches, blouse, and overcoats in short or long style can be obtained in the one color. Hats, caps, puttees, shirts, and sweaters can also be purchased in colors to match. The wearing of the uniform by field men is optional, but after October 1, 1932, it will be compulsory for United States game and reservation protectors.

A Correction.--The last sentence of the item entitled "Arranges for Bureau Badges," on page 90 of the July issue of THE SURVEY, should have read: "Badges for enforcement officers will carry the additional words 'Game Protector,' 'Deputy Game Warden,' or 'Reservation Protector,' as the case may be." The title of Federal deputies is "United States Deputy Game Warden," and not "United States Deputy Game Protector."

Appointment.--George Baer, of Washington, D. C., since August 12 has been serving a temporary appointment as junior messenger in the Washington office.

### BIOLOGICAL INVESTIGATIONS

Visits Yosemite Park.--During the latter part of July and the first week in August, Vernon Bailey accompanied a party consisting of members of the Sierra Club on an outing in Yosemite Park, Calif. He reports that he obtained many valuable notes on the distribution and habits of the vertebrates of the region. On the completion of this trip he went to Grand Canyon, Ariz, to study further the life of the canyon.

Field Worker Studies Data in Washington Office.--Thomas D. Burleigh, associate biologist, stationed at Asheville, N. C., was in Washington a few days during July identifying the bird skins made by himself during the past year in North Carolina and West Virginia. In order to obtain a better knowledge of the distribution of bird life in the territory in which he is working, he devoted some time to studying the data contained in the bird files of the bureau and the literature bearing on the region.

Receives Instruction in Taxidermy.--W. J. Erichsen, of Savannah, Ga., spent several days during July studying methods of making bird skins under the supervision of Charles H. M. Barrett, taxidermist of the bureau.

Bird Banding Work Shows Healthy Growth.--During the last fiscal year 169,279 birds were banded by the bird-banding cooperators of the bureau, and 12,329 returns were received. Thirty-four stations reported banding more than 1,000 birds during the year. The list of cooperators now numbers nearly 1,900, many of whom are conducting special studies at their banding stations.

Last Heath Hen Banded.--On April 1, Dr. A. O. Gross, of Bowdoin College, Brunswick, Me., and Thornton W. Burgess, of Springfield, Mass., visited Marthas Vineyard and trapped and banded the sole remaining heath hen. Two bands were used, one on each leg, so that should the bird fall prey to some predatory animal and the body be torn apart, the chances for recovery would be doubled. The bird was observed the following day on its accustomed ground, apparently in no way alarmed at the treatment it had received.

Completes Survey of Waterfowl Breeding Grounds in Maryland.--Dr. Oliver L. Austin, jr., has completed his survey of waterfowl breeding grounds on the eastern shore of Maryland and is back at his field headquarters at North Eastham, Mass. He will return to the Maryland district in the fall to make intensive studies of the migration of ducks through application of the banding method.



## FOOD HABITS RESEARCH

Visit Quail Farm.--On August 9 Mr. McAtee and Wallace B. Grange visited the White Oak Quail Farm, south of Richmond, Va., to inspect latest developments in methods and equipment. They report that the director is having a successful season.

Investigates Alleged Damage by Herons.--Francis M. Uhler left Washington for New England on August 20 to investigate reported damage by great blue herons to fish in trout streams. While in the region, he spent some time in the field assisting J. Paul Miller, of Amherst, Mass.

Goes Abroad.--Miss Phoebe Knappen left Washington the latter part of August for a European trip. While abroad she will spend considerable time at the British Museum doing bibliographic work of a semiofficial nature.

Transfer from Control Division.--Effective September 1, Shaler E. Aldous will be transferred from the Division of Predatory-Animal and Rodent Control to the Division of Food Habits Research, and will be detailed to the new Food Habits Research laboratory at Denver.

Appointment.--Cecil S. Williams, of Boulder, Colo., has been appointed junior biologist, effective September 1, and will be stationed at the new Denver laboratory.

To Band Pheasants in Missouri.--Wallace B. Grange left Washington on August 15 for Jefferson City and other points in Missouri, where he will band pheasants to be released in connection with game-bird studies being conducted in cooperation with the State Game and Fish Commission.

Attends Ship-Launching Ceremonies.--Dr. A. K. Fisher attended the launching ceremonies of the steamships Talamanca and Segobia, on August 15, at Newport News, Va., and saw the ships christened by Mrs. Hoover. He enjoyed the opportunity of meeting many notable people connected with the upbuilding of the merchant marine. On August 19 Doctor Fisher spoke before the boy scout troop at Wicomico, Md., on natural history subjects of interest to the scouts.

## FUR RESOURCES

Visits Rabbitry in Pennsylvania.--Mr. Ashbrook, in company with Dr. J. E. Shillinger, visited a rabbit propagation and packing plant at Emaus, Pa., on August 10. This rabbitry keeps only the New Zealand breed of rabbits, and raises them exclusively for meat and fur. The rabbits are killed and dressed on the farm, and the meat is sold to a chain-store company.

Attends Veterinary Meeting.--Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station, Saratoga Springs, N. Y., attended the meeting of the American Veterinary Medical Association, held at Kansas City, Mo., from August 24 to 28, and gave a talk on parasites and parasitic diseases of ranch foxes. En route to Kansas City he stopped in Warren, Pa., and Des Moines, Iowa, to visit fox farms in the vicinity.

Reports Favorably on Fur Farm.--W. D. Spencer, of the Bureau of Animal Industry, who visited the Fur-Animal Experiment Station early in August, reported that he was well impressed with the work being done there.

## DISEASE INVESTIGATIONS

Leaves for the West.--Doctor Shillinger left Washington the latter part of August for conferences in the West. En route he stopped at Kansas City, Mo., to attend the meeting of the American Veterinary Medical Association. At various cities, including Denver, Colo.; Ogden, Utah; Los Angeles, Calif.; Klamath Falls, Oreg.; Jackson, Wyo.; and Minneapolis, Minn., he expected to hold conferences with Department officials and cooperators in regard to disease conditions of wild life.

Investigations of Diseases of Upland Game Birds Progresses.--Drs. F. D. McKenney and L. C. Morley, who are engaged in work on diseases of upland game birds for this bureau at Richmond, Va., visited Staunton Hill Club at Brookneal, Va., early in August, for inspection and investigational purposes. Doctor Shillinger, accompanied by Doctor Morley, visited the Dupont Game Farm at Carney's Point, N. J., on August 11, and collected material for further research on diseases of upland game birds.

Disease Investigation Project Makes Motion Picture.--Doctor Shillinger with operators of the Motion Picture Laboratory of the Department visited the White Oak Quail Farm at Richmond, Va., during the week of August 17 to take a motion picture, which will cover the different phases of game-bird propagation and disease conditions as found in the investigations being conducted there.

## PREDATORY-ANIMAL AND RODENT CONTROL

Attend Hunters' Conferences.--Mr. Young and Mr. Henderson attended conferences of hunters and assistants connected with predatory-animal control work held at Chyenue, Wyo., July 25 to 28, and at Fish Lake, Utah, July 30 to August 1. A conference of hunters was held on the Wenatchee Forest in the Washington district, from August 17 to 19. Leo L. Laythe, of Denver, Colo., was present at the two held in his region, and Ira N. Gabrielson, of Portland, Oreg., at the one in Washington.

Relationship Between Predatory and Game Animals Studied.--Three field investigations concerning game surpluses on certain areas in New Mexico and Arizona and the relationship between game herds and predatory animals have recently been conducted by three separate committees, each composed of representatives of Federal, State, and private agencies. The committee that studied the problem of the deer surplus on the Kaibab National Forest recommended among other things that suspension of Federal and State predatory-animal killing be continued, and the area closed to private trapping and hunting of flesh-eating animals until adequate reductions of deer are made. No predatory-animal control work has been done on this forest by the Bureau for several years. The group that investigated game conditions in the western part of the Sacramento Mountains of New Mexico recommended that there be no diminution of the control of predatory animals. The reasons cited for this attitude were that a discontinuance of predatory-animal control would be disastrous to the remnant of wild turkeys, and uneconomical because of the money already spent to reduce the predators to their present numbers; that it is not economical to protect deer at great expense and then permit them to be destroyed, when the surpluses could be used; that an increase in the number of predators would soon become a serious menace to game and domestic animals; and that the excess-deer situation can be adequately cared for by other and more desirable means. The

committee that investigated big-game ranges on the Datil and Gila National Forests stated that as a relief for excess numbers of game on any area it vigorously opposes any policy involving a slackening of control efforts. To do so, it stated, would result disastrously to other game species on the same area and to livestock, and would later entail excessive expenditures for recontrol. From all angles it considered that such a policy would be unsound and uneconomical and would deprive sportsmen of game hunting. If the forage supply becomes threatened, control through other game-management means maintaining a proper balance between the game and its food supply rather than permitting an increase of predators, would be favored by the committee.

Resignation.--Miss Helen Rockwell, for two years clerk in the office of L. C. Whitehead, at San Antonio, Tex., resigned on August 3 to accept a position with the Customs Service. Miss Dorothy S. Chamberlain was appointed clerk on August 15 to fill the vacancy.

Coyote Control in Tennessee Completed.--Leader A. E. Gray, of the Oklahoma-Arkansas district, reports that the cooperative work on the control of coyotes in Tennessee has been successfully completed and that Hunter Earl May returned to Arkansas on August 1.

Kill Four Wolves with Five Revolver Shots.--H. P. Williams, leader of predatory-animal control in the Michigan district, once known as "High-power Williams" because of his remarkable skill with a rifle, and Ray Bellanger, field foreman, recently bagged four gray wolves, while they were on a two-day scouting trip east of Munising, Mich. The wolves, two adults and two yearlings, were shot with 22-calibre revolvers, only five shots being required to kill the four. This is a hunting record that will be very difficult to duplicate.

Attend Pharmacological Association Meeting.--Justice C. Ward, associate pharmacologist, of Denver, Colo., and Dr. J. C. Munch, consulting pharmacologist, of Philadelphia, attended the meeting of the American Pharmacological Association held at Miami, Fla., July 27 to 31. At the conference, Mr. Ward read a paper on quantitative methods of analysis of thallium in the tissues of an animal.

Texas Workers Confer and Map Program.--At the Agricultural and Mechanical College of Texas, College Station, Tex., July 27 to 31, State and Federal rodent control workers of Texas attended a series of conferences with programs relating to their work and mapped out a tentative program for the coming year. Biological Survey men who attended were: Regional Supervisor Donald A. Gilchrist; L. C. Whitehead, San Antonio, director of the Texas division; and the following in charge of divisions within Texas: J. E. Poore, Timson; Eddie Ligon, Fort Stockton; C. D. Schwartz, Dallas; R. B. Hickerson, El Paso; J. M. Hill, jr., Lubbock; L. B. Lindsey, San Angelo; F. W. Dawson, Abilene; Don A. Spencer, Houston; Dan A. Foster, Nacogdoches, and J. E. Boog-Scott, jr., Alpine.

#### LAND ACQUISITION

Makes Field Inspections.--Mr. Dieffenbach left Washington on August 2 to visit points in Minnesota, Wisconsin, Indiana, Missouri, and Kansas for the purpose of making inspections and conducting negotiations incident to the acquisition of lands for migratory-bird refuges.

Return to Washington Office.--Arthur A. Riemer returned to Washington on August 15 after inspecting surveys being conducted on the Upper Mississippi Refuge, the Crescent Lake Refuge in Nebraska, and the Big Lake Refuge in Arkansas.

Albert J. Rissman, who was detailed to Annapolis, Md., for approximately three weeks working on land grants, has returned to Washington.



Progress of Field Parties.--The field parties under Rudolph O. Gustafson, Peter J. Van Huizen, Paul T. Kreager, and Daniel H. Jenzen have been working in Indiana. Carey H. Bennett and Howard J. Sargeant are continuing in survey work at Burns, Oreg. George D. Chittick is on detail to the Washington office.

#### GAME AND BIRD CONSERVATION

Attend Meeting of State Game and Fish Commissioners.--R. W. Williams, Assistant United States Game Conservation Officer, of the Washington office, and United States Game Protectors George Tonkin and B. R. Britton, of Berkeley, Calif., and Socorro, N. Mex., respectively, attended the meeting of the Western Association of State Game and Fish Commissioners held in Flagstaff, Ariz., August 3 to 5. At the close of the meeting Mr. Williams visited other points in New Mexico, Texas, Louisiana, and Alabama to confer with officials and individuals regarding matters connected with the enforcement of the Migratory Bird Treaty Act.

Appointment.--Miss Virginia Chisholm of Washington, D. C., was appointed stenographer in the Washington office, effective August 18, to assist temporarily in handling the greatly increased correspondence resulting from the critical waterfowl situation.

Brevard Pelicans Nesting in June.--United States Game Protector J. V. Kelsey reports that the pelicans on Brevard Reservation, Fla., had eggs late in June. Although pelicans living on the west coast of Florida nest only in the spring and early summer, those on the east coast have for many years nested chiefly in the fall and winter, and now occupy their breeding grounds practically throughout the year. Brevard Reservation is situated on the east coast. There are at present more adult pelicans on this reservation than have been seen there during the past several years. Mr. Kelsey ascribes this condition to the fact that foliage on the island has recovered from the devastating storm of 1928.

Notes from the Bison Range, Mont.--There are now 83 buffalo calves on the National Bison Range, Mont., out of a total of 89 born there this season, an increase of 33 over the crop of last season. The calves and the adult animals are in excellent condition.

A delegation of about 200 farmers from the Eastern States visited the Bison Range on August 4. About 50 of the buffaloes were moved to a place on the preserve where they could be seen by the visitors.

In accordance with plans for rotation grazing, the buffaloes were recently moved into the substation pasture on the south side of the Range.

Nine lambs in the herd of mountain sheep at this preserve were killed recently by coyotes or bobcats.

K. F. Roahen, formerly acting in charge of the Bison Range, reports: "We have a pet bull elk, and a big one. One night last week he simply moved one of the main gates off the hinges and came in. He is now staying just back of the house and comes out every night to feed on the grass just west of the house."

Curlews Nest on Lake Minatare.--H. R. McElwee, deputy reservation protector of the North Platte Bird Reservation, Nebr., in reporting that a pair of longed-billed curlews nested on Lake Minatare, within the refuge, this year, expresses a belief that this is the first curlew nesting recorded on this area.

Waterfowl Conditions at Sullys Hill.---Wesley D. Parker, reservation protector at Sullys Hill Game Preserve, S. Dak., advises that conditions for waterfowl breeding in the vicinity of Sullys Hill Game Preserve are decidedly unfavorable this year.

Appointments.---Dr. Robert S. Norton was appointed, effective August 1, reservation protector at the National Bison Range, Moiese, Mont., to fill the vacancy created by the termination of the services of Frank H. Rose. Doctor Norton has been assistant State veterinarian of North Dakota for the past 15 years and has had extensive experience in ranching and the handling of range livestock. Before taking up his new duties in Montana, he was in Washington four days conferring with officials of the Survey and familiarizing himself with office procedure.

Benjamin M. Hazeltine has been given a temporary appointment as deputy reservation protector at Benton Lake Bird Reservation, Mont., and Edward C. Knopp was appointed deputy reservation ranger, at the Upper Mississippi River Wild Life and Fish Refuge. These appointees have also been designated United States deputy game wardens.

Miss Edna R. Beachley was appointed as junior stenographer in this division, having been transferred from the Veterans Bureau.

Improvement Work at Big Lake Reservation.---Work has been started on excavating the channel of Little River in the Big Lake Reservation, Ark., for the purpose of supplying water at low stages to the refuge. Recent rains have increased the depth of the water in the lake, but not to such an extent that it will interfere with the ditching operations, it is believed.

Conditions at Lake Malheur Reservation.---Dry weather has continued in the vicinity of Lake Malheur Bird Reservation, Oreg., and the water is at a very low stage.

Elk Refuge Notes.---M. W. Talbot, of the Bureau of Plant Industry, visited the Elk Refuge, Wyo., early in July to initiate experimental work in the control of squirreلتail grass. The first rain of any consequence since the latter part of May swept over Jackson Hole Valley on the night of July 28, and was followed by rains on July 29 and 30. These broke the most intense spell of heat endured in this locality for many years. The drought withered all forage plants not under irrigation and stunted the growth of all forage on the open winter range of the elk as well as that on the pasture lands. In order to keep the hay crop on the refuge from searing, the hay harvest was begun on July 7, about two weeks earlier than usual. The contractor completed the stacking of all the tame hay and part of the native hay on July 26. Approximately 425 tons of hay were harvested, and there will be about 100 tons more of native hay to be cut and stacked in August.

New Ranger for Upper Mississippi Refuge.---Dwight A. Beckwith of Clinton, Iowa, on August 3, was appointed reservation ranger on the Upper Mississippi Wild Life and Fish Refuge. His headquarters are at Larsing, Iowa, and he has been assigned to the district comprising the areas locally known as the Winneshiek Bottoms and the Harpers Ferry Bottoms. Mr. Beckwith has had previous experience in the enforcement of Federal and State game laws, having served for a number of years both as a warden under the Iowa Game and Fish Department and as a United States Deputy Game Warden in the enforcement of the migratory-bird treaty act.

Storage Warehouse for Upper Mississippi.---Bids have been solicited for rental of a suitable building at Winona, Minn., for a store room, a work shop, and a garage and house for small boats.

More Steel Posts for Upper Mississippi Refuge.--Another shipment of steel posts, numbering 3,300, has been received at the Winona supply depot for use in posting the Upper Mississippi River and other refuges. Delivery of a new supply of metal posters of the shield design is expected in the near future.

Upper Mississippi Fire Truck Equipped with Tank.--In order to combat the serious fire hazards that prevail on the Upper Mississippi Refuge, the fire-fighting truck at the refuge has been equipped with a 120-gallon steel tank for use in transporting water to replenish the supply in the portable tanks.

Five Violation Cases Terminated on Upper Mississippi.--Three cases involving violations of the Upper Mississippi River refuge act were terminated in Federal court at Superior, Wis., on August 10, pleas of guilty being entered in each instance. In two, which involved the carrying of firearms on the refuge, fines of \$25 each were imposed, and the third case, which was predicated upon the attempted unlawful taking of mink, resulted in a fine of \$1.

Two cases involving illegal fishing on the Mississippi River were recently terminated in State court, in one case a fine of \$25 plus costs amounting to \$13 being imposed, and in the other in default of payment of fine the defendant being sentenced to serve 60 days in the county jail. Evidence in these cases was secured by Rangers Lawrence, Hall, and Lundberg and Deputy Ranger Frerichs.

In Rio Grande Valley.--U. S. Game Protector Frank Clarkson spent about 10 days in the Rio Grande Valley the latter part of August in connection with the enforcement of the migratory-bird treaty act regulations.



Treaty-Act Cases Terminated--Reports Received during July

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier	1	Illinois	Hunting ducks after sunset	\$15 and costs of \$35
Creech	1	Iowa	Possessing ducks in storage in close season	\$5
Gordon*	2	Louisiana	Hunting and killing a duck from a motor boat	\$10 each
Roahen	1	Nebraska	Possessing ducks in excess of daily limit	\$5
Shaver, Nordeen*	1	Minnesota	Possessing wood ducks	\$15

Treaty-Act Cases Reported during July

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Hoffman	1	Alabama	Hunting and killing a duck in close season
Steele	2	Virginia	Killing and possessing sandpipers, dowitchers, knots, plovers, and turnstone.

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\* U. S. Deputy game warden



# THE SURVEY

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No. 9

## GENERAL NOTES

Five Full Weeks of Fast Work.—The Chief of the Bureau left Washington on August 22 by plane for western parts of the country, where he put in an active period of five weeks, returning to Washington on September 28. His first stop was made at Denver to permit conference with Biological Survey officials, and to discuss with C. C. Sperry the critical study he is carrying on of the stomach contents of the various predatory species of both birds and animals. During a day at Salt Lake City, Mr. Redington conferred with State Game Warden Newell B. Cook and attended a hearing with Senator Smoot and members of gun clubs with reference to the closing of the Bear River marsh to shooting.

The next stop was at Portland, Oreg., where, together with Commissioner O'Malley of the Bureau of Fisheries, Mr. Redington attended a specially called meeting of the Senate Committee on Wild Life Resources, those present being Senator Walcott of Connecticut, Chairman; Senator McNary of Oregon, Senator Pittman of Nevada, and Senator Hawes of Missouri. After a full discussion of Alaskan game and wild-life problems, a legislative program was drawn up by the Senatorial Committee. Conferences were also held there with State officials and sportsmen with reference to the wild-fowl situation.

At Boise, Idaho, Mr. Redington met M. P. Bailey, the State Game Warden, and 45 of his wardens, and at a banquet at the Owyhee, he was on the program with the Governor of Idaho and made an address with reference to the work of the Bureau. The next stop was at the National Bison Range in Montana, where two days were spent looking over the recent improvements and going over the work with the new superintendent, Dr. R. S. Norton. Later a careful examination was made of the status of the water on Nine Pipe and Pablo Reservations, on which heretofore public shooting has been allowed; public shooting was banned this year on account of the serious situation confronting the birds. In eastern Oregon and Washington and in Nevada, Idaho, and Montana Mr. Redington thoroughly investigated the water situation. He states that pot holes and lakes have dried up by the hundreds in these States, and just what the ducks are going to do for water and food on their southward migration through the region is problematical.

Mr. Redington next proceeded to Great Falls, Mont., where, in company with representatives of the Forest Service and with Congressman Leavitt, sportsmen, and engineers, he spent a day studying the possibility of placing water on Benton Lake, a Federal refuge that now is entirely dry. Congressman Leavitt and the Chief addressed a well-attended banquet of conservationists and others at Great Falls in the evening, after which Mr. Redington proceeded to Billings, Mont., where he had a day with R. E. Bateman, leader of predatory-animal control work in the State. He then journeyed to Wind Cave Refuge in South Dakota where he learned at first hand of the progress of developing a better water supply both for use on the reservation and for the National Park Service.

At Denver, the next point on the tour, Mr. Redington had a conference with Congressman Eaton and many sportsmen, including Game Commissioner Parvin, in reference to the waterfowl situation. He then spent three days traveling south into the San Luis Valley, meeting sportsmen. Returning again to Denver he conferred with F. E. Garlough, L. L. Laythe, and C. C. Sperry on matters of Bureau concern. Kansas City was the next stop, and a short conference



was held there with G. E. Mushbach, superintendent of the Bear River Migratory Bird Refuge, Utah.

From Kansas City Mr. Redington went to Hot Springs, Ark., to attend the convention of the International Association of Game, Fish, and Conservation Commissioners. He had opportunity there to go into local problems with many of the State game administrators, and delivered an address on the waterfowl situation. By unanimous resolution, the Association commended the work of the Biological Survey in the waterfowl crisis and pledged the Bureau its support in making the emergency regulations efficacious. He also attended a called meeting at Hot Springs of fourteen of the Federal Game Protectors and had opportunity to learn from them as to the wild fowl situation in their respective districts.

Mr. Redington states that the morale of the field forces was found to be excellent: that the men in the field are actively on their jobs; and that the game protectors who were seen gave assurance that they would do everything possible to see that violations are checked; and he expressed gratification on learning from the game protectors that in this bad year the game wardens or game commissioners in the respective States have promised full aid in the enforcement of the migratory-bird treaty act regulations.

Attend International Game Commissioners Convention.--In addition to the Chief, members of the Bureau attending the 25th Annual Convention of the International Association of Game, Fish, and Conservation Commissioners, at Hot Springs, Ark., September 24 and 25, were Mr. Henderson, the Associate Chief, and W. R. Dillon, assistant game conservation officer. Mr. Henderson returned direct to Washington after adjournment of the convention, and Mr. Dillon proceeded to points in Louisiana, Florida, and Georgia on work of the Bureau.

Appeals for Waterfowl Conservation.--In addition to voluminous correspondence during the month explaining the purposes of the recent amendments to the regulations for the protection of migratory birds, the Bureau has issued several statements to the press of the various parts of the country, including sporting and outdoor periodicals; on September 25 Mr. Redington addressed the annual convention of the International Association of Game, Fish, and Conservation Commissioners at Hot Springs, Ark., on the subject; on September 17 Mr. Henderson made a nationwide appeal to sportsmen from Radio Station WRC and 43 other stations associated with the National Broadcasting Company. All these, together with the President's Proclamation of August 25 have been calculated to bring the people of the country to a realization of the seriousness of the crisis affecting our waterfowl and have urged cooperation in the enforcement of the conservation measures adopted.

Testimonial to Doctor Fisher.--About 50 present and former members of the Biological Survey honored Dr. A. K. Fisher at a meeting held in the office of the Chief on the morning of September 10, following his recent retirement. Mr. Henderson, acting chief, presided and in his introductory remarks reviewed the long service of Doctor Fisher, with the Bureau, dating back to the establishment of the organization in 1885 (see THE SURVEY for August, pages 104-105). He then introduced Dr. T. S. Palmer, who recounted some of the outstanding events in the history of the Biological Survey and the prominent part that Doctor Fisher has played in its development and in the progress of natural-history work in this country. W. L. McAtee, who succeeded Doctor Fisher in charge of the work in economic ornithology, and whose first work in the Bureau was under Doctor Fisher's direction, gave some personal reminiscences, emphasizing his early chief's wide influence as a teacher and his loyalty and personal helpfulness to employees under his direction. Mr. McAtee concluded with a presentation of an original painting by E. R. Kalmbach, of the great horned owl, and a gift in gold, subscribed by friends of Doctor Fisher. Responding, Doctor Fisher told of the circumstances attending the actual inception and organization of the Bureau, voiced his appreciation of the feeling of good will that resulted in the gathering, and expressed his

best wishes for the future usefulness of the Bureau. After Mr. Henderson had said a final word of felicitation, individual greetings were exchanged between Doctor Fisher and those with whom he had been associated for varying periods of service in the work of the Survey.

Memorial Services for Dr. J. W. Gidley.--On September 29 several members of the Survey attended the memorial services, presided over by Dr. Alexander Wetmore at the U. S. National Museum, held in honor of Dr. James Williams Gidley, late assistant curator of fossil mammals of the National Museum. Though Doctor Gidley's principal work was in paleontology, his natural-history interests were much broader and covered the whole field of mammalogy. In consequence, his friendships with a number of present and former members of the Biological Survey were of long standing. His services with the National Museum began in 1905 and he had been an assistant curator for the past 20 years. He was a charter member of the American Society of Mammalogists. Among the speakers at the memorial services who paid tribute to Doctor Gidley were Dr. T. S. Palmer, of the Survey, who briefly reviewed his education, training, and paleontological work and praised warmly his outstanding qualities as a scientist and as a man. Doctor Gidley was born in Iowa, on January 7, 1866, and died at Washington on September 26, 1931. Interment was at Evergreen Cemetery, Brooklyn, N. Y.

Official publications were received during the month as follows:

- "How to Attract Birds in Northeastern United States," Farmers' Bulletin 621, revised. By W. L. McAtee. Issued, August; received September 1.
- "Officials and Organizations Concerned with Wild-Life Protection, 1931." Miscellaneous Publication No. 122. Compiled by Frank G. Grimes. Received September 17.
- "Migratory Bird Treaty-Act Regulations and Text of Federal Laws Relating to Game and Birds" (including amendments of August 25 and September 12, 1931). Service and Regulatory Announcements B. S. 76. Received September 23.
- "Open Seasons for Game, 1931-32." Poster 50 (Bi), revised. Compiled by Frank G. Grimes. Received September 24.
- "Game Laws for the Season 1931-32: A Summary of the Provisions of Federal, State, and Provincial Statutes." Farmers' Bulletin No. 1684. By H. P. Sheldon and Frank G. Grimes. Received September 26.

#### BIOLOGICAL INVESTIGATIONS

Studies of Wild Life and Life Zones in California and Arizona.--During part of July and well into August Vernon Bailey accompanied a party of the Sierra Club on a trip through the high mountains of central California. The area covered lies mainly above 9,000 feet and from that up to 12,000 and 13,000 feet altitude and gave a rare opportunity for detailed life-zone studies, the collection of many interesting forms of native wild life, and more or less accurate determination of the limits of their zonal range. Mr. Bailey's familiarity with the plant and animal life of the region was of much benefit to other members of the party, for the Sierra Club is composed largely of members who go into the mountains to combine pleasure with real accomplishment in knowing and understanding alpine wild life. They are firmly back of all progressive moves in conservation and outdoor education.

Mr. Bailey on his return from California stopped for a few days at the Grand Canyon, in Arizona, where he did collecting work in the little known and rarely visited eastern part of the canyon. Going down the old Tanner Trail into the canyon north of Desert View, where there is some real bottomland below the mouth of the Little Colorado, he found considerable



areas of mesquite and catclaw on the sandy flats. Willows cover some of the sand bars and shore lines, and in recent years a dense growth of tamarisk has appeared on the occasionally flooded shores. This unusual growth of vegetation, clearly seen with a glass from Desert View and Lipan Point above, was found to attract deer, foxes, coyotes, bobcats, and an occasional mountain lion, many small rodents, and some small carnivores, besides birds and reptiles. While cactuses, yuccas, and Lower Sonoran desert vegetation scatter over the dry slopes generally, this part of the canyon was found rather rich in animal life and deserving of much more thorough study than that permitted by the few days allowed for the trip. Many good specimens and interesting records and notes were obtained, however, in the four days' trip, including the 12-mile trail to the bottom and the longer and harder climb back to the top. Mr. Bailey says that the Grand Canyon still holds more treasures of unknown wild-life lore than all it has yet yielded.

Confers with New York Conservationists.--On his return from the Grand Canyon, September 14, Mr. Bailey departed at once for Albany, N. Y., to attend a meeting of the New York State Conservation Commission, called for September 15 for the purpose of developing a system of game refuges and public-shooting grounds and a general policy of game management in the State. The members of the commission, the legislative committee, and experts on game, fish, and forestry matters gave a full day to discussion of conditions within the State, and this resulted in the unanimous adoption of a broad and progressive policy of game management. A preliminary study of game refuges in the State made for the commission by the Biological Survey last May furnished valuable data for use in determining game policies. The possibilities of improving and maintaining the game supply of New York State seem encouraging under the present far-sighted policy of furnishing refuges and providing for game propagation, protection, and the control of enemies in the wild.

Banding Work Producing Longevity Records.--The bird-banding files are each year furnishing more and more information concerning the length of life enjoyed by birds in a state of nature. Of two returns recently received, one, a herring gull banded as a chick at St. James, Mich., on June 27, 1925, was captured at Silver Water, Ont., about August 18, 1931; the other, a red-tailed hawk, banded on June 30, 1924 at Muscow, Sask., was found at Balcarres, Sask., on August 15, 1931. The oldest bird thus far reported was the drake pintail banded when adult at the Bear River Marshes, Utah, by Dr. Alexander Wetmore, on September 16, 1914, and killed on October 16 or 17, 1926, 10 miles north of Brawley, Calif.

Barn Swallow Trapped on Asphalt Roof.--On June 28, 1931, Dr. Oliver L. Austin, Jr., banded a young barn swallow at North Eastham, Cape Cod, Mass. Under date of September 9, 1931, this bird was reported from Panama City, Fla., where it was found dead, stuck to the sun-softened asphalt on a roof. As the barn swallow is rather a slow migrant, the record is of unusual interest.

Tribute to Dr. Walter P. Taylor.--A recent issue of The Federal Employee states that the July number of Desert Doings, published by the local union at Tucson, Ariz., is "The Walter P. Taylor Number," a tribute to the Eighth Vice-President (now the Fifth), of the National Federation of Federal Employees. In this article appears a brief account of Doctor Taylor's achievements, both in the field of science, and as a member and officer of the union, in which his service dates from his entry into Government work in 1916.

Best wishes are extended to Mr. and Mrs. Raymond A. Palmer, who were married August 29, 1931, at Baltimore, Md. Mrs. Palmer was formerly Mrs. Adelaide B. Woolley of this Division, and Mr. Palmer is employed in the Graphics Section of the Bureau of Agricultural Economics.



## FOOD HABITS RESEARCH

Refuge Inspection.--A. C. Martin returned on August 29 from a lengthy investigation of prospective Federal migratory-bird refuge sites in the southeastern United States and left on September 2 to carry on similar work in New England.

Attends Conference.--Wallace B. Grange on September 15 attended the conference held by the New York State Conservation Commission, at Albany, N. Y., where a comprehensive plan for the creation and management of game refuges in that State was discussed.

Getting Results in Duck-Sickness Studies.--Field reports from E. R. Kalmbach indicate that the duck-sickness studies being conducted at Klamath Falls, Oreg., will be successful in revealing the source of infection under natural conditions. A number of substances collected in and around Tule Lake have been found to carry enough of the botulism poison to produce the characteristic symptoms in birds under laboratory conditions.

## FUR RESOURCES

Attends Veterinary Meeting.--Dr. Karl B. Hanson left Saratoga Springs, N. Y., on August 20, to attend the annual meeting of the American Veterinary Medical Association, held at Kansas City, Mo., August 24 to 28. He read a paper on fox diseases and gave a practical demonstration of various methods of handling foxes for treatment. En route to Kansas City, he visited a fox ranch at Warren, Pa., to furnish advice regarding disease problems and sanitary conditions. Returning he visited a ranch at Des Moines, Iowa, to make observations concerning a destructive epizootic disease among the foxes, and also visited other fox ranches in that vicinity. He returned to Saratoga Springs on August 31.

Visitors at Fur Animal Station.--Among the visitors at the Fur Animal Experiment Station at Saratoga Springs last month were Arthur T. Semple, of Beef Cattle Investigations, Bureau of Animal Industry, and Walter McDevitt, who was formerly a fox farmer at Fairbanks, Alaska. Both were intensely interested in the work being conducted in the interest of the fur-farming industry.

Exhibits at Los Angeles County Fair.--The United States Rabbit Experiment Station displayed an exhibit at the Los Angeles County Fair this year at Pomona, Calif., September 18 to 27, showing the occurrence of woolly rabbits in litters of normal-haired parentage, and the latest equipment for handling and housing rabbits, including an all-metal hutch developed at the Station at Fontana. Charts and literature concerning rabbit breeding on a commercial scale were made available for free distribution. Material for the exhibit was the joint contribution of the Station and the Department of Biological Sciences of the University of Southern California at Los Angeles. The 4-H Cloverleaf Rabbit Club, of which Allen E. Suitor is leader, met at the Station on August 14 to complete plans for its rabbit booth at the Los Angeles County Fair. The rules and premium lists were explained by John W. Meyer, director of the station, and by Mr. Suitor.

Visits Rabbit Station.--Dr. J. E. Shillinger, in charge of the Bureau's Office of Disease Investigations, spent several days at the Rabbit Experiment Station early in September to discuss the work on rabbit diseases that is being conducted in cooperation with the University of Southern California and other agencies in the State. Mr. Meyer assisted him in making contacts with rabbit breeders and their organizations to obtain first-hand information on disease problems.

Appointment.--Miss Eleanor B. Wright was appointed Junior Stenographer, effective September 1.

Miss Jozy Dell Hall, who has recently been granted leave without pay on account of illness, is recuperating at Santa Fe, N. Mex. It is hoped that the change will be beneficial and that she will be able to return to the Washington office by the latter part of October.

#### DISEASE INVESTIGATIONS

More Evidence That Swans Died from Water Pollution.--On a recent visit to Harrison, Idaho, Doctor Shillinger found indications of serious pollution in the Coeur d'Alene River with mine and smelter waste and conditions that furnished additional evidence that the death of a number of swans found there last spring was due to that cause.

Speaks on Disease Investigations.--At Pullman, Wash., at the request of members of the faculty of the State College in conjunction with the local chapter of the Izaak Walton League, Doctor Shillinger on September 21 showed the motion picture, "The Fur Industry of the United States," and spoke on the Bureau's activities on wild-life disease investigations.

#### PREDATORY ANIMAL AND RODENT CONTROL

Continues Western Tour.--Mr. Young continued his official tour in Western States during the month, spending some time in Oregon, Washington, and California interviewing cooperators and inspecting field operations.

Trapping Demonstrations Given in North Carolina.--A. M. Day spent the period September 5 to 15 conducting a trapping school at Asheville, N. C., for game wardens of the Pisgah National Forest and Game Preserve. On the approximately 100,000 acres of this area maintained by the Forest Service there is a plentiful supply of deer, and it is hoped to build up substantial flocks of wild turkeys and other wild birds there. Demonstrations were given in trapping bobcats, foxes, and other small predators in the interests of increasing the supply of game mammals and birds.

Resignations.--Mrs. Hilda B. Lyons, clerk in the Reno, Nev., office, resigned on August 31.

Mrs. Helen C. Haenggi, stenographer at the Sacramento, Calif., office, resigned effective September 30.

Sympathy is extended to O. L. Coleman, leader of predatory-animal control in Wisconsin, in the death of his wife on August 23. Mrs. Coleman was buried at Canyon, Tex., the former home of the family.

#### LAND ACQUISITION

Crescent Lake Acreage Purchased.--The second large payment for lands being acquired under the Migratory Bird Conservation Act has recently been made upon conveyance to the United States of 17,398 acres in the Crescent Lake Migratory Bird Refuge, in Nebraska. This is slightly less than half the area being acquired from one vendor in the Crescent Lake Refuge, but the lands to be paid for are now under lease and together with those purchased are being used as an inviolate sanctuary. The first tract of large size to be acquired was the property of more than 12,000 acres in the St. Marks Migratory Bird Refuge in Florida.

Title examinations are proceeding at a rapid rate on the Cape Romain Refuge, in South Carolina, as well as on the several other projects that have been approved by the Migratory Bird Conservation Commission.

Movements of Field Personnel.—Harold W. Hicks returned to Winona, Minn., on September 9 after a short detail to Washington, where he has been assisting in the preparation of statistical reports.

Albert J. Smith has completed work on the survey of the Crescent Lake Refuge in Nebraska. Upon his return to duty on September 23 after annual leave he was given a short detail to the Washington office.

Charles S. Cook has finished work on the survey of lands within the Upper Mississippi Refuge, and after completing necessary office work at headquarters in connection with surveys previously made he will proceed to North Carolina to take charge of the survey of lands within the Swanquarter Migratory Bird Refuge.

Kenneth C. Kern and Ralph J. Campbell left Washington on September 9 to begin work on a survey of proposed refuge lands on the Eastern Shore of Maryland. They will later be assisted by Oswald E. Recroft and Jack Y. Upham. A. A. Riemer spent several days in September on the same project.

Carey H. Bennett has been assisting Chester W. Pecore in survey work on the Lake Malheur Bird Refuge and will continue there until the middle of October.

William T. Krummes left Washington on September 17 for Winona, Minn., where he will be joined by Howard J. Sargeant, who has been engaged in work on the Lake Malheur survey. Mr. Krummes is being placed in charge of a field examination party, and the first unit to be examined is in Iowa.

Congratulations are extended to George F. Pierce, draftsman in this division, on the advent of a new granddaughter.

#### GAME AND BIRD CONSERVATION

Big Lake Bird Reservation.—The excavation of the channel of Little River on the Big Lake Bird Reservation has been completed. Water is now flowing into the Lake, and Protector Crossley reports that in spite of the lack of rain approximately 1,500 acres are under water. There is an abundance of fine duck food at the reservation this year.

Sullys Hill Game Preserve.—The drilling of a well on the Sullys Hill Game Preserve under funds available from the first deficiency appropriation act was highly successful. Work is also going forward on the cut-off dam at Sweetwater Lake and on the installation of a water system.

Field Officers Visit Washington.—George E. Mushbach, Superintendent of the Bear River Migratory Bird Refuge, Utah, conferred with officials in Washington September 16 to 19 on the administration of the refuge.

H. Harrison Hoyt and Mrs. Hoyt, from Wind Cave Game Preserve, S. Dak., called at the Survey on September 9 while on vacation.

Superintendent Steele Attends Meetings.—Superintendent Steele of the Upper Mississippi River Wild-Life and Fish Refuge attended the annual meeting of the Minnesota Game Protective Association, at Hutchinson, Minn., on August 17; on September 14, 15, and 16 he attended and addressed the annual convention of the Nebraska Division of the Izaak Walton League of America, at Norfolk, Nebr., and spoke on the waterfowl crisis; during the first week in September



he was in the Washington office conferring with officials on matters connected with the administration of the Upper Mississippi Refuge.

Bird Feeding Stations on Upper Mississippi.--Increased numbers of feeding stations for birds are being established and will be maintained throughout the fall migrations on the Upper Mississippi Refuge. Efforts will be centered on selected portions of the Refuge, and feeding will be resumed next spring at the time of the northward migration.

Fire Hazard on Upper Mississippi.--With water in the Mississippi River at the lowest stage for many years, the fire hazard on the Upper Mississippi Refuge promises to be even more serious this fall than was the case last spring, when constant vigilance was maintained for weeks by the entire refuge personnel in an effort to minimize so far as possible the menace to the wild-life. Fires had begun to break out as early as the first week in September, and by September 15 there had been several of serious proportions. On September 12 and 13 Ranger Hall and his fire-fighting forces worked a whole afternoon and half the night before they succeeded in bringing under control a stubborn fire that had broken out in the Refuge near La Crescent, Minn. For a time this fire threatened the important Target Lake sanctuary and feeding station. Fanned by a high wind, another fire apparently originating on a railroad right of way burned over a large area in Wisconsin opposite Wabasha, Minn., on September 11 and 12. Some damage was done to game and other valuable forms, including the burning over of a portion of the feeding grounds used by beaver colonies. Besides Ranger Lundberg and his cooperative fire wardens, approximately 40 employees of the railroad company were engaged in combating the fire.

Former Superintendent Cox Appointed State Director of Conservation.--The newly created Conservation Commission of the State of Minnesota recently selected Wm. T. Cox, former superintendent of the Upper Mississippi Refuge, as its director and executive officer. He will have charge of the Departments of Game and Fish; Forestry, Drainage, and Waters; and Mines and Minerals. Mr. Cox resigned from the superintendency of the Upper Mississippi Refuge about two years ago to accept the position of chief forester of Brazil.

Refuge Violator Fined in Federal Court.--Upon a plea of guilty in Federal Court at Superior, Wis., to the charge of possessing firearms on the Upper Mississippi Refuge, a resident of La Crosse, Wis., was recently sentenced to pay a fine of \$25.

Importer and Bureau Correspondent Dies.--The Bureau has been advised of the death on July 28 of Doctor William Learn, of Laredo, Tex., who was one of the largest importers of Mexican quail and other birds and had been a correspondent of the Bureau for many years.

Interesting Species Imported.--Among the importations during August were several interesting birds, including 750 strawberry finches, 4 Soemmerring pheasants, and 8 argus pheasants. The strawberry finches arrived in three lots, two direct from Calcutta and one by way of Yokohama. Because of their high mortality in captivity these brightly-colored little birds are not considered profitable by the trade, and as the duty of 50 cents each was considered prohibitive, importations almost ceased soon after it was first imposed. Thus the tariff acted as a protective measure. It is interesting to note that economic difficulties have apparently now been overcome so that dealers find it profitable to bring in a limited number of these birds.

The argus pheasant, a native of the Malay Peninsula, and largest and most gorgeous of all the pheasants, was formerly rarely brought to the United States but in recent years

a few have been brought in from time to time. Five of these rare birds arrived direct from Singapore on August 14 and three by way of Yokohama. On account of their high value, these birds are subject to the higher rate of duty of 20 per cent ad valorem.

In a shipment that arrived on August 4 from Kobe were four Soemmerring, or copper, pheasants from Japan. Several forms, or subspecies, of this pheasant have recently been described. Formerly it was advocated for introduction into the United States as a game bird, although most of the birds actually brought in were utilized for exhibition rather than for stocking purposes. The Soemmerring pheasant was described almost exactly a century ago, in 1830, and was named in honor of a celebrated German anatomist and physiologist, Prof. Samuel Thomas von Soemmerring, who died in that year at the age of 75. He maintained the theory that nerves act independently of the brain, which he considered was not essential for the continuance of life. Thus the arrival of these birds recalls not only the history of the bird but some ideas of the last century that no longer receive general acceptance.

Losses and Gains En Route.--Many shipments of live animals show losses on arrival due to deaths en route. In a shipment of 250 monkeys, however, that arrived at New York from Calcutta on August 21, the number had been increased during the voyage by three births.

Changes Made in Duck Shooting Season.--Under further amendment to the migratory-bird treaty act regulations, approved on September 12, a change in the seasons for hunting wild ducks, geese, brant, and coot was made in fourteen States. This was in accordance with a recent statement by the Secretary that further minor changes in the amendments of August 25 would be necessary. Under the new changes the season for hunting in Massachusetts, Connecticut, Rhode Island, and Illinois will be during the month of November; in Ohio and Indiana the season will begin October 16; in Iowa, Missouri, Nebraska, Kansas, and Oklahoma the season will open on October 20; while in Nevada, Oregon, and Washington it will open on November 16. The season nowhere exceeds one month. Information submitted by sportsmen and interested persons and supported by bureau investigations had indicated that the open seasons previously prescribed for these States did not give residents hunting opportunities comparable with those in other near-by States.

Boy Scouts Told of Birds.--U. S. Game Protector W. L. Birsch, of New Bern, N. C., addressed the members of a Boy Scout Troop at their weekly meeting on September 11, at Riverside, N. C. His talk was part of the course being given the troop in the bird life of that vicinity and dealt especially with the water birds around New Bern. During the meeting Mr. Birsch answered many questions concerning wild life, and was urged to attend again.

Emergency Mail Handled.--Miss Virginia Chisholm was appointed temporary stenographer in the Washington office on August 18 to assist in handling the largely increased correspondence resulting from the emergency situation with respect to waterfowl.

Officials Meet with Western Commissioners.--R. W. Williams, assistant U. S. game conservation officer of the Washington office, and U. S. Game Protectors B. R. Britton, of Socorro, N. Mex., and Geo. Tonkin, of Berkeley, Calif., attended the meeting of the Western Association of State Game and Fish Commissioners at Flagstaff, Ariz., August 3 to 5. Following the meeting, Mr. Williams proceeded to New Mexico to investigate conditions on the Rio Grande and Carlsbad Bird Refuges, and also conferred with officials and others regarding matters pertaining to the enforcement of the Migratory Bird Treaty Act. On the return trip he visited points in Texas, Louisiana, and Alabama to confer with Survey employees, State officials, and others in connection with the administration of the Federal game laws. Messrs. Britton and Tonkin returned to their respective headquarters after the Flagstaff meeting.

Migratory-Bird Treaty-Act Cases Terminated--Reports Received during August

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Creech	1	Illinois	Possessing ducks in excess of daily limit	\$15
"	1	"	Hunting ducks in close season	\$15
A.V.Hull*	3	Utah	Hunting ducks after sunset	\$10 each
A.V.Hull*,W.R.Hull**	1	"	Hunting and killing ducks after sunset	\$10
A.V.Hull*,W.R.Hull**, Argyle**	3	"	Killing ducks after sunset	\$10 each
Jans*	1	Illinois	Killing ducks and coots from motor boat	\$15
Jans*,Westine*	3	"	Killing coots from motor boat	\$15 and costs of \$35 each
" "	1	"	Killing ducks from motor boat	\$15
Leichhardt,Hubbard*	5	Washington	Hunting ducks after sunset	\$1 and costs of \$20 each
Mushbach,Hull*, Argyle**	1	Utah	Hunting waterfowl from motor boat	\$10
Tonkin	2	California	Killing and possessing band-tailed pigeons	\$25 each

Upper Mississippi Bird Refuge Cases Terminated during August

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Frerichs*	1	Wisconsin	Trapping wild animals on closed area	\$1
Lawrence,Stevenson*	2	"	Carrying firearms on closed area	\$25 each

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\* U. S. Deputy game warden

\*\* Deputy State game warden



# THE SURVEY

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Washington, D. C., October 31, 1931

No. 10

## GENERAL NOTES

Inspects Upper Mississippi Refuge.--On October 2 Mr. Henderson arrived at Dubuque, Iowa, where he met prominent members of the Izaak Walton League, officials of the Bureau of Fisheries, of the War Department, and of the Biological Survey, and other active conservationists, who had been invited by the acting director of conservation of the Izaak Walton League to make an inspection of the Upper Mississippi River Wild Life and Fish Refuge. Starting at Dubuque, the party proceeded up river by the refuge cruiser Merriam and other motor boats, making stopovers at McGregor, Iowa, La Crosse, Wis., and Winona, Minn., where they were joined by representatives of local conservation organizations. The visitors observed the pollution and silting of the Mississippi River and considered the effects that maintaining the 9-foot channel proposed by the War Department would have upon the timber of the bottom lands as well as upon the fish and other forms of wild life. At meetings held in La Crosse and Winona a number of speakers discussed present conditions and those to be expected if dams are constructed for establishing a 9-foot channel. Refuge Superintendent Ray C. Steele and Francis M. Uhler of the Division of Food Habits Research were also present at the conference and on the excursion. After spending a day in St. Paul conferring with Dr. R. G. Greene of the University of Minnesota on studies of Minnesota wild life in which the Bureau is cooperating, Mr. Henderson returned to Washington.

Survey Members Participate in A. O. U. Meeting.--Thirteen members of the Biological Survey attended the forty-ninth stated meeting of the American Ornithologists' Union held at the Book-Cadillac Hotel, Detroit, Mich., and at the Museum of Zoology in Ann Arbor, Mich., October 20 to 24. At the Tuesday afternoon technical session F. C. Lincoln presented a paper on the "Sex Ratio of Banded Ducks". At the general session on Thursday morning Vernon Bailey spoke on "Rosy Finches Nesting in the Central Sierra of California." All three papers were illustrated by lantern slides. The exhibits included one illustrative of bird banding and a display of color plates and proof sheets from "Florida Bird Life" by Arthur H. Howell, to be published soon. In addition to the color plates, Mr. Howell exhibited a set of the original paintings, specially made for the book by Francis L. Jaques. Dr. T. S. Palmer and W. L. McAtee were reelected secretary and treasurer, respectively, of the Union, and Dr. H. C. Oberholser was continued as a member of the council. Members of the Biological Survey attending the meetings, in addition to those already mentioned, were: Mr. Redington, Mr. Henderson, E. A. Preble, Ira. N. Gabrielson, Francis M. Uhler, W. B. Grange, and C. H. M. Barrett.

Receives Medal for "Birds of New Mexico."--For her book "Birds of New Mexico," a co-operative publication of the New Mexico Department of Game and Fish, the State Game Protective Association, and the Biological Survey, Mrs. Florence Merriam Bailey was awarded the Brewster Medal at the A. O. U. meeting in Detroit on October 19. The medal is awarded biennially to the author of the most important work relating to the birds of the Western Hemisphere published during the preceding six years. Included in the award is the income from a fund of \$7,250, established in 1919 by friends of William Brewster. Mrs. Bailey, the first woman to receive the award, is the wife of Vernon Bailey, senior biologist, and the sister of Dr. C. Hart Merriam, the first Chief of the Bureau.

Confer with Canadians on Wild Fowl.--After the adjournment of the A. O. U. meeting, W. L. McAtee and Francis M. Uhler met with three representatives of the Canadian Government in Detroit, and these five at the request of More Game Birds in America (Inc.) considered recommendations for alleviating the shortage of migratory wild fowl.

Reelected Officer of Audubon Association.--Dr. T. S. Palmer on October 23 was re-elected a member of the board of directors of the National Association of Audubon Societies and was again chosen by the board to be first vice-president of the association.

Bureau Conducts Exhibit at Virginia State Fair.--Lisle Morrison reports that the Bureau's exhibit at the Virginia State Fair held at Richmond, October 5 to 10, was a success, judging by the number of people who visited the display and the interest they evinced. The exhibit, of which Mr. Morrison had charge, was prepared in cooperation with the Commissioner of Game and Inland Fisheries of Virginia. It depicted various activities of the Biological Survey, stressing particularly the value of birds and mammals to agriculture and the need of wild-life conservation. Many mounted specimens of birds and mammals were included in the exhibit, one series showing all the species of ducks on which there are open seasons, another emphasizing the necessity of protecting game birds and mammals from such predatory animals as bobcats, coyotes, and mountain lions. The Commission of Game and Inland Fisheries furnished live birds for use in connection with the exhibit.

Major Edward D. Redington, father of the Chief of the Biological Survey, died at his home in Evanston, Ill., on October 9. On being informed of his father's serious illness, Mr. Redington hastened to be at his side, but unfortunately, as was the case when his mother passed away last November, death came before he could arrive. The members of the Bureau as a token of sympathy and respect sent a telegram to the Chief on the morning of the funeral and provided a floral emblem.

Correction.--The page numbers in THE SURVEY for October should have been 115 to 124.

#### BIOLOGICAL INVESTIGATIONS

Addresses Izaak Walton League Council.--Doctor Bell attended the meeting of the Maryland-District of Columbia Regional Council of the Izaak Walton League of America, at Solomon's Island, Md., October 16 and 17, and spoke on "The Wild Duck Situation."

Study Waterfowl Conditions.--The Bureau's investigations of waterfowl conditions have been continued, and plans have been made for further studies. From September 21 to 25 Dr. H. C. Oberholser, in company with Louis A. Branchaud, United States game protector, observed conditions on the Potomac and Patuxent Rivers. They traveled on the Bureau launch down the Potomac from Washington and up the Patuxent almost as far as Upper Marlboro. Doctor Oberholser reports the general region a suitable breeding place for wood ducks, a number of which he saw. During the past month Doctor Oberholser has been conducting such investigations along the southern and western shores of Lake Erie. At the close of the sessions of the American Ornithologists' Union meeting at Detroit, F. C. Lincoln left for an extended study of conditions in the Mississippi Valley from Illinois to the Gulf of Mexico. L. J. Goldman also has been carrying on waterfowl investigations in Idaho, Oregon, California, Nevada, and Utah, and selecting representative areas where the birds should be studied intensively in the future.



Confers with Conservationists.--E. A. Goldman was in New York City recently to attend a conference on wild-life conservation problems.

Mammal Collections Being Transferred.--Dr. H. H. T. Jackson reports that progress is being made in moving the Biological Survey mammal collections to the new quarters in the National Museum annex.

Surveys Wild-Life Conditions in Okefenokee Swamp.--Thomas D. Burleigh is making a further study of wild-life conditions in the Okefenokee Swamp in Georgia to obtain information concerning the present conditions surrounding the birds and mammals of this interesting region.

Assigned to Reindeer Investigations.--Charles Rouse, who assisted L. J. Palmer in caring for the musk oxen during their quarantine in New York and their transportation to the experiment station at College, Alaska, was recently detailed to carry on reindeer investigations. His headquarters will be at Nome, Alaska, where he will have charge of the work previously handled by W. B. Miller, who is now receiving treatment at the Veterans Bureau Hospital, Walla Walla, Wash., for illness contracted as a result of severe exposure.

Visits Chicago.--S. B. Locke was in Chicago recently to confer with national officers of the Izaak Walton League of America.

Bands Ducks on Chesapeake Bay.--Dr. Oliver L. Austin, jr., has been establishing baiting areas and installing equipment for banding of waterfowl along Chesapeake Bay. According to recent reports, he has been successful in taking a number of ducks.

Motion Pictures of Elk Taken.--In cooperation with the department's motion picture laboratory O. J. Murie, who is continuing his studies of the elk and other wild life of the Jackson Hole region, has obtained a fine series of motion pictures illustrating the life history and habits of the elk.

Investigates Reindeer Problems in Northern Minnesota.--C. E. Aldous recently visited the Superior National Forest, in Minnesota, to investigate the condition of reindeer introduced in that region and to study the relation of their feeding activities to those of the game animals and to forest production.

Recovers from Illness.--E. R. Scholl, who for some weeks was at the Naval Hospital for treatment, has again taken up his duties.

Makes Observations in Washington.--Dr. W. P. Taylor returned to Tucson, Ariz., from Washington State on September 30, after making scientific observations, consulting notes of other workers, and making arrangements in connection with his reports to be made on work done there several years ago. While on annual leave in Seattle, Wash., he also attended the annual meeting of the Federal Employees' Union held there September 5 to 11.

#### FOOD HABITS RESEARCH

Season's Inspection of Proposed Refuge Sites Terminates.--Neil Hotchkiss, who has been making a general survey of the wild-fowl food resources of Wisconsin lakes, including special inspections of areas recommended for Federal migratory-bird refuges, has completed his summer field work and returned to Washington October 3. A. C. Martin, who has been



inspecting refuge sites in Maine, returned on September 16. With the return of these two men, field investigation of proposed refuge sites is terminated for the calendar year.

Cooperates in Game Studies.--Wallace B. Grange has been cooperating with game-institute fellows on upland game-bird studies in Wisconsin, Minnesota, and Michigan. Arrangements have also been made for the Bureau, through Mr. Grange, to assist in planning a 25-year conservation program that has been authorized for the State of Iowa.

Attends Izaak Walton League Conference.--After attending a conference of the Izaak Walton League at Dubuque, Iowa, early in the month, and accompanying the party on the inspection excursion on the Upper Mississippi Wild Life Refuge, Francis M. Uhler made inspections of additional areas on the refuge.

Investigate Reported Damage to Fish Industry.--J. Paul Miller has undertaken a study of reported damage by gulls to shell fish in southeastern Massachusetts.

Shaler E. Aldous has gone to Elephant Butte Lake, N. Mex., to investigate reported damage to fish by so-called "water-turkeys," probably cormorants.

Reprints Quail Investigation Report.--For the past few months American Field has been reprinting each week a chapter from "The Bobwhite Quail: Its Habits, Preservation, and Increase." This book, which forms the final report on the Cooperative Quail Investigation, was prepared chiefly by Herbert L. Stoddard, when in the employ of the Bureau. The publishers have recently advised that the first edition is so nearly exhausted that they are planning a reprint.

#### FUR RESOURCES

Visits Saratoga Springs and New York City.--Mr. Ashbrook inspected a fox farm at Great Barrington, Mass., on October 1, and discussed with the owner problems concerning future developments. He then proceeded to the Fur-Animal Experiment Station at Saratoga Springs, N. Y., where he conferred with Dr. Karl B. Hanson regarding experiments in progress and inspected the construction work completed under the emergency appropriation during the past fiscal year. He reports that refrigeration equipment, which will permit large-quantity purchases of food for the animals was installed the first of October.

En route back to Washington Mr. Ashbrook stopped in New York City to confer with the general director of the American Raw-Fur Institute regarding the organization and policies of the Institute, and with other fur-trade officials. He reports that raw-fur prices have declined materially and that many raw-fur houses are advising trappers to expect no increase in price for their product this coming season.

Fur Animal Station Attracts Visitors.--Doctor Hanson reports that since July 1 there have been approximately 450 visitors at the Fur-Animal Experiment Station, which is a great increase over the number for the corresponding period last year.

Visitors at Rabbit Station.--Stanley P. Young, in Charge of the Division of Predatory-Animal and Rodent Control, with Mrs. Young, accompanied by Regional Supervisor Ira N. Gabrielson and W. C. Jacobson of the California Department of Agriculture, visited the Rabbit Experiment Station, at Fontana, Calif., during the first week in October.

4-H Rabbit Club Exhibit Wins First Prize.--First prize was awarded the Fontana Clover-leaf 4-H Rabbit Club, of which A. E. Sutor, assistant at the Rabbit Experiment Station is leader, on its booth displayed at the Los Angeles County Fair, September 18 to 27. The booth, one of several entered by 4-H club groups in southern California, showed the accomplishments of one of the members and exhibited desirable and undesirable types of equipment for rabbit raising. At the same fair the Rabbit Station, in cooperation with the University of California, made an exhibit on the inheritance of "woolly" in rabbits, and a special leaflet on the subject was made available for free distribution. The Station also displayed all-metal rabbit hutches and other labor-saving types of equipment.

#### DISEASE INVESTIGATIONS

Reports on Western Trip.--Doctor Shillinger has returned to Washington from a seven weeks trip in the Western and Central States, obtaining information concerning losses due to diseases among fur animals in the wild and on fur and game farms. At the University of Minnesota, where investigations of diseases of fur animals have been in progress for several years, he reports, the vaccine for the prevention of fox encephalitis has been found efficient. Animals closely observed under laboratory conditions as well as large numbers that have been inoculated with this vaccine on fur farms show a high degree of immunity from the disease. Plans are being considered for having the vaccine produced commercially for the general use of fur farmers. While in the West Doctor Shillinger stopped at Dixon, Mont., to confer with Dr. Robert Norton, reservation protector at the National Bison Range, relative to matters concerning the health of the various animals there. Most of the animals, says Doctor Shillinger, appeared to be in good condition with no evidence of abnormalities. Doctor Shillinger and Doctor Morton, however, considered the possibility of parasitism causing the low rate of reproduction among the mountain sheep. Doctor Shillinger also conferred with O. J. Murie at Jackson, Wyo., and discussed plans for making a more complete study of such injuries and infections as may occur among the elk.

Confers on Diseases of Upland-Game Birds.--On October 16 and 17 Doctor Shillinger was in Richmond, Va., conferring with Dr. F. D. McKenney, who is studying diseases of upland-game birds. On the game farm at Richmond, where the cooperative work is being done, losses among the young birds have been fewer this year than usual, but several new diseases have made their appearance. While Doctor Shillinger was in Richmond, he conferred also with other specialists on infectious diseases to outline plans of study.

#### PREDATORY-ANIMAL AND RODENT CONTROL

Return from Field.--Mr. Young, who for three months had been investigating control work in the West and attending field conferences, returned to Washington on October 26.

Can Red-Squill Rat Baits.--James Silver, regional supervisor of the Eastern District, and E. M. Mills, leader of rodent control in the New England States, have been engaged during the past month in canning red-squill rat bait at a factory leased for the purpose at Barnstable, Mass. During the initial run they put up approximately 50,000 cans--the estimated number required for the Massachusetts state-wide campaign and for the county-wide campaigns in Connecticut and New York scheduled by Mr. Mills for October and November. The same system of three kinds of bait--meat, fish, and cereal--that has proved so successful in previous campaigns has been followed in canning the baits, a half-pound can of each kind being wrapped in a single package with directions for use printed on each can and on the out-



side wrapper. Exceptionally favorable quotations on fish and meat have made production at low cost possible; it is anticipated that the baits can be supplied to any point in the Eastern District at a cost not to exceed that of preparing them locally. The canned bait has been given thorough tests in the field with excellent results.

Carries on Porcupine Control Work.--F. N. Jarvis, of the office of Regional Supervisor of the Eastern District, carried on porcupine-control work on the Allegheny National Forest in northwestern Pennsylvania during the month of September. This work was a continuation of experiments begun last year, at which time excellent control was obtained on a small scale with the salt-block method. On the area covered Mr. Jarvis found that all porcupines could be reached by placing the baits in the rock-ledge dens, and that tree stations were unnecessary. Under his supervision approximately 14,000 acres were treated at a cost of about 3 cents an acre.

Making Drive on Cotton Rats in Florida.--Carlyle Carr, whose operations conducted in the rodent-control district recently organized in Florida have been proving successful, is at present engaged in an intensive drive to control cotton rats on the "Lower Glades" in southern Florida. Last year these rodents inflicted damage reported to have approximated \$150,000. Mr. Carr is working in cooperation with the Extension Service, the State Conservation Commission, and other public agencies of the State.

Acrobatic Rats.--Roy Moore, leader of rodent control in the Mississippi, Alabama, and Louisiana District, reports that the poultry department of Alabama Polytechnic Institute, Auburn, Ala., claims to have rats that are interested in the higher things, as college rats should be. The main building at the poultry farm, once believed to be rat proof, has smooth concrete walls and carefully screened windows, but rats gained entrance and stole eggs. No one was able to find out how they got in, until one night against a moonlit sky a rat was seen hurrying along an insulated light wire attached under the eaves of the building about 12 feet from the ground and running to a low shed 50 yards distant. A moment later the rat was heard on the tin roof of the shed. On examination the following day a rat hole was discovered in the cornice board just above the insulator to which the wire is attached. That rats have used this route repeatedly was evidenced by the soiled condition of the board between the rat hole and the wire.

Prairie Dog Battles Rattlesnake.--O. E. Steph1, leader of rodent control in Montana, recently reported an interesting combat between a rattlesnake and a prairie dog witnessed by W. F. Hardin, foreman of a poison-distributing crew. When Mr. Hardin's attention was called to the battle the prairie dog's entire breast was already covered with blood, the result of its having been struck repeatedly by the snake. The snake was coiled in the entrance to a rather high prairie-dog mound, and the prairie dog approached the burrow cautiously and advanced up the side of the mound until near the opening. It suddenly darted forward, and sprang upward and backward. Closer observation revealed that this kind of spring was caused by the strike of the snake. The attack of the prairie dog and the strike of the snake were repeated several times while Mr. Hardin and one of the other men watched. As nearly as could be seen, the snake's fangs reached the mark each time, but movements of the two animals were so rapid that they were very difficult to follow. The snake was in such a position that it could be approached from only one side, while the prairie dog, the aggressor, had to climb the side of the mound at each attack. The snake thus had sufficient time to recoil after striking. Neither paid any attention to the men until other members rapidly riding up frightened the prairie dog away. Seemingly quite ill, it went down a



burrow a short distance away, but the snake appeared to be unhurt. As this encounter took place on August 22, it can scarcely be thought that the prairie dog was a mother attempting to protect her young.

Transferred to Food Habits Research Project.--S. E. Aldous, who has been an investigator in the Control Methods Research Project since May 21, 1928, was transferred to the Division of Food Habits Research, effective September 1.

Appointment.--Effective October 11, Miss Jeannette Nelson was appointed stenographer in the Sacramento office, succeeding Mrs. Helen C. Haenggi.

#### LAND ACQUISITION

Resigns to Pursue Postgraduate Studies.--George D. Chittick, one of the four junior foresters appointed at the beginning of work under the migratory-bird conservation act in 1929, resigned effective September 12 in order to take a postgraduate course at the New York State College of Forestry. For several months after his appointment Mr. Chittick and Carey H. Bennett worked under the direction of Harold W. Hicks examining and appraising lands proposed for refuges. After preliminary training, Mr. Chittick was placed in charge of a field party and was engaged on this work until a short time ago, when he was detailed to the Washington office. Mr. Chittick has the good wishes of the force for his future progress.

Appointment.--Gladys R. Nordgard was appointed junior stenographer in this division on October 9, by transfer from the Office of the Solicitor. Miss Nordgard's home is in Duluth, Minn., where she attended school and was employed by several private concerns. On May 1, 1931, she received a temporary appointment with the War Department, and on August 10 was appointed for temporary work in the Office of the Solicitor of this Department.

Progress of Field Surveys.--Albert Smith, jr., on detail to the Washington office, is engaged in office work in connection with field surveys recently conducted by him.

Kenneth C. Kern, Oswald E. Recroft, Jack Y. Upham, and Ralph J. Campbell are continuing work on the survey of proposed refuge lands on the Eastern Shore of Maryland.

David D. Pugh, Lawrence K. Hayes, and James W. Whitehead, under the direction of Charles S. Cook, assistant cadastral engineer, are engaged on the survey of lands within the Swanquarter Migratory Bird Refuge in North Carolina.

Carey H. Bennett, detailed some time ago to Lake Malheur Reservation because of urgent requirements there, has returned to the Lake Benton refuge in Montana to investigate the possibilities of increasing the water supply.

William T. Krummes and Howard J. Sargeant are in Iowa, examining and appraising lands that have been recommended as possible migratory-bird refuge sites.

Rudolph O. Gustafson and Peter J. Van Huizen have been examining proposed refuge areas in Maine, and Daniel H. Janzen one in Missouri.

Paul T. Kreager, who has been on an extended detail to the Washington office, left on October 8 for points in Florida, where he will examine proposed refuge sites.

#### GAME AND BIRD CONSERVATION

Talks to Boy Scouts.--On October 10, R. W. Williams, assistant U. S. game conservation officer, talked to the Boy Scouts at Camp Wilson, Md., on the general subject of "Birds."

Game Protectors Hold Conference.--W. R. Dillon presided at a conference of United States game protectors for the Mississippi Valley, held in Hot Springs, Ark., beginning September 21. At this meeting plans were made for an intensive campaign in connection with the enforcement of the Federal game laws during the coming winter and spring. In brief talks to the game protectors Mr. Redington and Mr. Henderson presented first-hand information relative to the status of the migratory wild fowl as a result of drought in the Northwestern States and the Prairie Provinces of Canada. United States game protectors present at the conference included B. J. Shaver, M. A. Charlton, John Q. Holmes, J. E. Perry, Harry Barmer, Stephen Creech, S. W. Linebaugh, L. J. Merovka, George M. Riddick, F. A. Johnson, Frank Clarkson, and E. R. Britton. Ray C. Steele, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, and United States Reservation Protector Steven B. Crossley, in charge of the Big Lake Bird Reservation, also participated in the conference.

Visit the Washington Office.--Game Protector W. L. Birsch, of New Bern, N. C., was in the Washington office September 23 and 24 conferring with Bureau officials. O. D. Steele, United States game protector with headquarters at Cambridge, Md., visited the Washington office on October 13 and 14 to discuss plans for work in his district during the coming season.

Visitors at Bear River Refuge.--On September 12, George E. Mushbach, superintendent of the Bear River Migratory Bird Refuge, Utah, conducted a number of Mormon officials and young men and boys of the church over the refuge. Mr. Mushbach discussed with the visitors the purposes of the refuge, its main features, and its bird life. L. M. Winsor, former irrigation engineer on the development of the project, accompanied the party and spoke on the geological and engineering features. The party included approximately 150 persons, transported in 26 automobiles and trucks.

Visitors at Sullys Hill.--During September 2,059 persons with 410 cars visited Sullys Hill Game Preserve, N. Dak.

Notes on the Elk Refuge.--The total amount of hay harvested on the Elk Refuge, Wyo., during the past summer was 626 1/2 tons. On September 2, all the members of the Wyoming State Game and Fish Commission visited the refuge. In the evening a meeting was held at Moran, Wyo., at which were present the members of the Commission; A. P. Nelson, protector of the refuge; A. C. McCain, forest supervisor; O. J. Murie, of the Biological Survey; the local State game wardens; and United States Senator R. D. Carey. After a brief discussion, the Commission voted unanimously to have the open season on waterfowl in the State shortened to the month of October in conformity with the Federal regulation.

Appointments.--Hugh M. Worcester has been appointed United States reservation protector and United States deputy game warden in charge of Tule Lake and Clear Lake Bird Reservations, Calif., and Upper Klamath Bird Reservation, Oreg. Harry E. Magbee has been appointed agent and United States deputy game warden in charge of Blackbeard Island Bird Reservation, Ga. William VanDanAcker and Leonard J. Barthell have received appointments as deputy reservation rangers and United States deputy game wardens on the Upper Mississippi River Refuge. The following persons have been appointed for varying periods during the hunting season as deputy reservation protectors and United States deputy game wardens: James D. Pittman, Cape Romain Migratory Bird Refuge, S. C.; Robert E. Towle, Deer Flat Bird Reservation, Idaho; William E. Hubbard, Dungeness Spit Bird Reservation, Wash.; Isaac Allen and Alfred Whitaker, Bear River Refuge, Utah; and W. G. Brown, Nine-Pipe and Pablo Reservations, Mont. Eli Taylor,

through the generous cooperation of the Florida Audubon Society, has been employed as deputy reservation protector at Brevard Bird Reservation, Fla., during the nesting season.

The resignation of W. H. Hoffman, formerly United States game protector with headquarters at Mobile, Ala., was accepted September 12.

Visits the Washington Office.--Mrs. M. E. Davidson, one of the Bureau's importation inspectors at San Francisco, was in Washington on October 28 and 29. En route East she attended the A. O. U. meeting in Detroit. She plans to sail soon from New York for Panama.

Importations.--The first consignment of birds received direct from Greece arrived at Boston about October 9. The shipment consisted of 30 goldfinches. Among the more interesting birds brought in during the month were two parrakeets (Pionites leucogaster) from Brazil.

Several permits have been issued during the month for the importation of silver foxes. Most of these foxes are shipped from Prince Edward Island, and a total of 391 have been authorized to enter this country during the past few weeks.

A permit was issued on October 3 for the shipment of 1,000 Hungarian partridges from Czechoslovakia for the Pennsylvania Game Commission.

Waterfowl Concentrate on Upper Mississippi.--Owing perhaps to the drought conditions that have prevailed throughout the Middle West, the Upper Mississippi River Wild Life and Fish Refuge is proving an oasis for the migratory waterfowl in that section of the country. Rangers throughout the refuge have reported the presence of birds in greater numbers this fall than during the past several seasons.

Intensive Patrol of Upper Mississippi Refuge Curbs Violations.--Despite the concentration of migratory waterfowl on the Upper Mississippi this fall, an unusually small number of violations has been reported by rangers. The largest and most efficient patrol force ever assembled on the refuge has, by concerted efforts, succeeded in discouraging violations to a pronounced degree. There is, in consequence, a more strict observance of the refuge regulations and the regulations of the migratory-bird treaty act in the refuge area this fall than ever before.

Metal Posters Received at Winona.--A carload of metal refuge posters of the shield design was recently delivered to the Winona supply depot for use in posting the Upper Mississippi River and other refuges.

Upper Mississippi Refuge Violators Fined.--Upon entering pleas of guilty in State Court to the charge of shooting and possessing wood ducks, six Wisconsin residents recently were fined amounts aggregating \$300. For taking game fish illegally a resident of La Crosse, Wis., having entered a plea of guilty in State Court, was fined \$50 and costs of \$6.40. Evidence in these cases was obtained by Rangers Lawrence and Hall and Deputy Ranger Knopp.



Treaty-Act Cases Reported During September

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Litaker*	1	North Carolina	Killing and possessing a cat bird
Mebane*	1	Mississippi	Hunting and possessing doves in close season
Perry, Lawhorn*, Nill*	1	Kansas	Killing and possessing a duck in close season
Whitehead, Adams**	2	Georgia	Hunting mourning doves in close season

Treaty-Act Cases Terminated--Reports Received During September

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Richmond*	1	Illinois	Killing and possessing a duck in close season	\$25 and 2 years' probation
" "	1	"	Killing and possessing a duck in close season	\$25
Birsch, Lewark*	2	North Carolina	Killing and possessing wood ducks	\$10 each
Creech	2	Iowa	Possessing ducks in storage in close season	\$10 each
Holmes, Hough**	1	"	Killing and possessing ducks in close season	\$50 and costs of \$28.50
Jans*	1	Illinois	Hunting ducks from a motor boat	\$10
Perry, Huhn*	2	Missouri	Hunting ducks in close season	\$25 each

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\* U. S. Deputy game warden

\*\* Deputy State game warden

# THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
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Vol. 12

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No. 11

## GENERAL NOTES

Chief Returns to Washington Office.—After spending a month in Evanston, Ill., handling matters with reference to the estate of his father, who died on October 9, Mr. Redington returned to Washington on November 11. During his stay in Illinois the Chief was able to confer with many of the bureau's cooperators in Chicago and vicinity, including Dr. W. H. Osgood of the Field Museum, Dr. A. M. Bailey of the Chicago Academy of Science, officers of the Izaak Walton League, and individuals interested in duck hunting on the Illinois River. He spent three days in and around Peoria conferring with Stephen Creech, United States game protector for that district, and learned of the excellent cooperation from the State game wardens in Illinois.

Economy Measures to Bring Budget Cuts.—Because of the necessity of paring down expenditures to match more nearly the estimated revenues of the Government, budget estimates for the fiscal year 1933 will show a considerable reduction from amounts appropriated for the current fiscal year. The Biological Survey is cooperating in this economy, and although cuts in most instances will not be large they will mean a somewhat restricted program for the new fiscal year. Expenditures for travel are specifically scheduled for a reduction, steps along this line having already been taken as evidenced by the Secretary's Memorandum No. 621 reducing subsistence allowances. There will be no promotions during the year, as announced in THE SURVEY for June, and no new positions will be created except in extreme cases. °

Bureau Submits Estimates for 6-Year Building Program.—The executive departments were recently requested by the Federal Employment Stabilization Board (created by act of Congress at its last session) to submit a 6-year Program of Advance Planning of Federal Construction, embodying estimates of construction costs; yearly expenditures; annual cost after completion for operation, maintenance, repairs, and alterations; and additional costs where the construction program involves the purchase of land. The Biological Survey's estimates have included the acquisition program for establishing and developing new wild-life refuges; the improvement and development of reservations and experiment stations now under administration; the construction of boats and other floating equipment; and the purchase of airplanes and construction of hangers in connection with the Alaska game-law enforcement. The total program for construction work as it has been presented calls for an expenditure of \$1,893,540. The policy of Congress in enacting the legislation is set forth in the following section of the Employment stabilization act of 1931:

"Sec. 8(a). It is hereby declared to be the policy of Congress to arrange the construction of public works so far as practicable in such manner as will assist in the stabilization of industry and employment through the proper timing of such construction, and that to further this object there shall be advance planning, including preparation of detailed construction plans, of public works by the construction agencies and the United States."

Bureau Badges Now Available.—Badges are now available for the use of Bureau employees. For the exclusive use of enforcement officers badges carrying the designation "U. S. Game





Protector," "U. S. Reservation Protector," or "U. S. Deputy Game Warden," as the case may be, have been provided. Badges to be worn by other employees will carry the words "United States," "U. S. Department of Agriculture," and "Biological Survey"--the same as those for enforcement officers but without the further designation. Instructions regarding the use of these badges are being sent to all field men.

Honor Health Service Veteran.--Dr. W. B. Bell, Dr. H. C. Oberholser, and Dr. T. S. Palmer attended a dinner held at the Cosmos Club on November 7 in honor of Dr. Charles Wardell Stiles, who was retired from active duty in the Public Health Service after more than 40 years of service in the Government. Doctor Palmer, in one of the after-dinner addresses, paid tribute to Doctor Stiles as a zoologist.

Addresses Biologists.--At a meeting of the Biological Society of Washington, held at the Cosmos Club on November 28, Doctor Palmer spoke on "Meeting in Honor of the Anniversary of William Henry Flower (1831-1899)."

Seagoing Ornithologist a Washington Visitor.--S. Philbrick Smith, able seaman on the U. S. S. New Mexico and an associate of the American Ornithologists' Union, visited friends in the Washington office on November 27.

Well-Known Ornithologist Visits Bureau.--Dr. Louis B. Bishop, of Pasadena, Calif., an ornithologist well known for his collection of North American birds, was a visitor in the Washington office on November 27.

Published in November.--The following publications were issued in November:  
"Report of the Chief of the Bureau of Biological Survey," By Paul G. Redington. Issued November 25.  
"Game Laws for the Season 1931-32," Farmers' Bulletin 1684, revised. By H. P. Sheldon and Frank G. Grimes. Issued October; received November 24.  
"Inheritance of 'Woolly' in Rabbits." Biological Survey multigraphed leaflet Bi-1171. By A. W. Bellamy, University of California. Issued November; received November 28.

#### BIOLOGICAL INVESTIGATIONS

Suprised at Deer Numbers in Virginia.--Vernon Bailey returned November 16 from a week's trip over southeastern Virginia, where, at the request of the State Game Commission, he made a rapid survey of some of the best deer counties in the State. Here, where the deer have been hunted with firearms for more than 300 years, it is surprising, reports Mr. Bailey, to find them still in such numbers that 100 to 150 are killed each year in many of the counties. The extensive swamps and timber tracts of this region, he says, provide food and cover enough for many more deer than at present, and, with more refuges, a shorter season, and lower bag limit, the deer population could be greatly increased. The proportion of does to bucks he judged to be about 5 to 1--a satisfactory relative abundance. Mr. Bailey left Washington again on November 27 for Asheville, N. C., to assist in establishing the beaver on the Pisgah National Game Preserve. He plans to return by way of Richmond and other points in Virginia, arranging for the collection of specimens of deer and other mammals.

Works on Rodents.--During the month of October Dr. W. P. Taylor, field naturalist at Tucson, Ariz., worked on the manuscript on rabbit life histories, put in some time on the manuscript on the Birds of Washington, and, with D. M. Gorsuch, completed the rough draft of a short manuscript report on a differential exclosure test (made during the years 1925-



1931) to determine the effect of rodents on western yellow pine seeds at the Fort Valley Station, Flagstaff, Ariz. Doctor Taylor during the month participated in field work on the total-protection sample plot at the newly established cooperative climatic station, at the Santa Rita Experimental Range, near Continental, Ariz. He also made three trips to various points (Binghampton, Canada del Oro, Santa Catalina Mountains, and Madera Canyon, Santa Rita Mountains) with the Tucson Natural History Society, of which he is president, for the observation of vertebrates and vegetation.

Returns from Illinois Study.—Frederick C. Lincoln returned to the Washington office on November 27 from central Illinois, where he had been making observations on waterfowl conditions in the Illinois River Valley. Confirming earlier observations, Mr. Lincoln reports that the number of waterfowl in that region has been only about 25 per cent of what were present there during November, 1922. Ducks were abundant on the large rest lakes, but it was an easy matter to note the general reduction that has taken place in their numbers during the last nine years.

Reports on Migratory Birds on Eastern Coast.—Dr. Oliver L. Austin, jr., who spent October making a survey of waterfowl conditions on the lower Chesapeake, reports a marked scarcity of migrant ducks and geese in that section. The birds were abundant on the Susquehanna Flats, he says, but the lower reaches of the Bay, from the Choptank River south, had not 5 per cent of their normal numbers of scaups, pintails, and geese. During the first two weeks in November Doctor Austin, on a reconnaissance through coastal New England, found that the usual early flight of migrant birds, especially the scoters, scaups, and geese, had failed to materialize. Although the locally-reared black ducks had a fairly successful breeding season in that region, they were not up to their usual numbers. There has been a failure in the eel-grass crop on the coastal flats in many places from Maine south to Maryland, but Doctor Austin is of the opinion that neither this nor the drought can be blamed entirely for the scarcity of black ducks. Over-shooting during the last few years is thought to be the most likely factor responsible for their present status in that region.

Doctor H. C. Oberholser after investigating waterfowl conditions on the Susquehanna Flats near Havre de Grace, Md., November 11 to 14, reported that on his first day there he observed considerable numbers of canvas-backs, lesser scaups, and black ducks with a fair representation of other kinds, but that by the following day more than half of these birds had left the region.

Tells Club about Washington Birds.—Arthur H. Howell, on November 2, gave an illustrated talk before the Woodridge Garden Club on birds about Washington.

#### FOOD HABITS RESEARCH

Organizing Quail-Management Demonstrations.—Wallace B. Grange, in company with Herbert L. Stoddard and representatives of a commercial company, is inspecting areas in southeastern States on which it is proposed to put into effect the quail-management methods developed in the Cooperative Quail Investigation. Two of these projects have already been definitely decided upon, and the total number may be as high as 15. On November 17 at a meeting of the National Grange at Madison, Wis., a paper by Mr. Grange presenting results of the bureau's work on game management and making recommendations to farmers was read.

See Success in Williamston Project.—Messrs. McAtee and Grange, who during the time of their attendance at the A. O. U. meeting in Detroit inspected the Williamston Project (on October 24), report that in its present phase, the project seems to be achieving de-





sirable results in the improvement of farmer-sportsman relationships and of game-management methods. Among the party that visited the project were also Herbert L. Stoddard, Ralph E. Yeatter, and Paul L. Errington, active cooperators of the Biological Survey.

Investigates Damage by Flood.---Francis M. Uhler recently made an examination of damage claims in areas flooded by one of the dams placed in the upper Mississippi River as part of the effort to stabilize water levels.

Raven Problems in Texas.---E. R. Kalmbach and S. E. Aldous, who had been engaged in an investigation of damage by crows and white-necked ravens in South Central States, recently began studying damage by ravens in Texas. Urgent demands for similar assistance have been received from Arkansas and Oklahoma also.

Denver Laboratory Headquarters Established.---The food habits research laboratory in Denver was established in permanent headquarters at 1441 Welton Street on November 9, and permanent equipment is now being installed. In their more ample quarters, the bureau investigators who are carrying on this work in Denver are planning to make examinations of stomachs of all species taken in control activities. Limitations of space and equipment have heretofore confined their studies to stomachs of coyotes.

#### FUR RESOURCES

Grading and Marketing Rabbit Meat.---T. W. Heitz, Federal specialist in market grading and inspection, Bureau of Agricultural Economics, and Dr. R. B. Mericle of Los Angeles, Calif., recently visited the Rabbit Experiment Station, at Fontana, Calif., to study local problems of butchering rabbits and grading the meat, with the view of establishing Government inspection. John W. Myer, director of the station, arranged several meetings with various groups of rabbit breeders so that Mr. Heitz and Doctor Mericle might explain the Federal service of inspection and methods, of grading, and point out the advantages of both in developing the rabbit-meat business.

Cloverleaf Rabbit Club Wins High Honors.---An Achievement Night program was held by the Cloverleaf Rabbit Club, Fontana, Calif., at the Fontana Grammar School on October 24. A blue seal was again placed on the charter, and a special merit badge was presented by the Fontana Rotary Club for the most successful program of work. A rabbit hutch was given by the club to its outstanding member, and a special award for the best 4-H reporter was also presented. John W. Myer and Allen Sutor, who are responsible for organizing and developing the club, were present.

Weekly Articles on Rabbit Raising Appear in Fontana "Herald".---The Fontana Herald is carrying a weekly column in which is reprinted information taken from bulletins and leaflets published by the Department of Agriculture dealing with rabbit raising and intended primarily for the beginner in the industry.

Inheritance of "Woolly" in Rabbits. is the title of a multigraphed leaflet (Bi-1171), issued by the bureau during the month, prepared by Dr. A. W. Bellamy, of the Department of Biological Sciences, of the University of California, in cooperation with the Biological Survey and the Agricultural Experiment Station of the University. It consists of three pages, including a rotoprint chart showing how the character is inherited from normal-haired parents and how it may be eliminated. Individuals having this character, according to the leaflet, are practically the same as the Angora rabbit, the chief difference being that the Angora has been purposely developed through careful selection and breeding. The occurrence of the woolly, or long-haired young, in litters from normal parentage is due solely





to inheritance and can be eliminated by avoiding breeding from carriers of the gene for woolly.

General Accounting Office Representative at Fur Station.—John F. Feeney, of the General Accounting Office, visited the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., on October 30, to check the administrative work and to observe at first hand workings of the station.

Addresses Rotary Club.—Mr. Ashbrook attended a luncheon given by the Rotary Club, at York, Pa., on November 25, gave an informal talk on the fur-farming industry, and showed the Department's motion pictures of "How to Get Rid of Rats" and "The Cougar Hunt".

Returns to Washington Office.—Miss Jozy Dell Hall, who was temporarily detailed to the Experiment Station, at Fontana, Calif., last May, returned to the Washington office on November 2. The temporary appointment of Miss Eleanor B. Wright, employed in the Washington office during Miss Hall's absence, terminated on October 31.

Visitors.—David C. Mills, director of the American Raw Fur Institute, New York, N. Y., with his son Harry, visited the Washington office October 22 and 23.

A representative of a rabbit concern in Pennsylvania visited the office on October 22 and 23 and distributed samples of rabbit meat to members of the bureau and to the Bureau of Home Economics, for cooking experiments.

### DISEASE INVESTIGATIONS

Upland Game Birds.—On October 29 and 30 Doctor Shillinger and Dr. F. D. McKenney observed the method of brooding and housing quail on a game farm at Carney's Point, N. J. It is hoped, says Doctor Shillinger, that comparison of hygienic conditions on a number of game farms will lead to the discovery of the causes of certain diseases to which upland game birds on such farms are subject.

Transferred to Rabbit Disease Investigations.—As losses among the adult birds through the winter months are usually very light, active work on the study of upland game bird diseases will soon be suspended for this season; and Dr. F. D. McKenney, who has been engaged in this investigation, is being transferred to Los Angeles, Calif., to study rabbit diseases. Good headway has been made in this work, in the cooperative project at the University of Southern California, and further studies will be undertaken to combat extensive losses in commercial rabbitries.

Attends Veterinary Meeting.—Doctor Shillinger attended the meeting of the New England Veterinary Medical Association on November 9 and 10 at Boston, Mass., and presented a paper on diseases of fur animals. His talk was illustrated by the Department motion pictures, "Epizootic Fox Encephalitis" and "How to Handle Foxes".

Studies Outbreak of Disease Among Foxes.—Dr. Karl B. Hanson, director of the Fur-Animal Experiment Station at Saratoga Springs, N. Y., visited a fox ranch in Boonville, N.Y., on November 10, to investigate an outbreak of disease in foxes.

### PREDATORY-ANIMAL AND RODENT CONTROL

Inspect Rat-Bait Canning.—W. E. Crouch, accompanied by James Silver, regional supervisor of the eastern region, left Washington on November 6 for Barnstable, Mass., where the



bureau has established a plant for canning rat baits. They inspected the operations at the plant and observed results obtained with the baits in antirrat campaigns in New England. In these campaigns, says Mr. Crouch, there was a larger demand for the canned bait than could be supplied, and the results from its use are encouraging.

To Hold Field Conferences.--A. M. Day left Washington on November 19 for a month's work in the field. After conferring with officials of an animal-trap company in Lititz, Pa., he planned to confer with control leaders and bureau cooperators in Michigan and Wisconsin.

Predators Destroy Reindeer and Moose in Alaska.--H. H. Gubser, leader of predatory-animal control in Alaska, reports that following serious depredations by coyotes in the reindeer herd maintained at the bureau's experimental station at Fairbanks, a short trap line was established and instructions were given for its care. As a result two coyotes were caught by employees of the station and several more were trapped by farmers in the immediate vicinity. There have been no further depredations there by coyotes. Mr. Gubser also writes that he has received reports that a number of moose were killed by wolves in the vicinity of Eagle, Alaska.

New Cooperative Association Formed.--Assistant Leader R. K. Stewart has spent some time in the Big Horn Basin country, lining up the farmer-hunter work for the coming season and organizing a "Shoshoni Predatory-Animal Control Association" made up of sheepmen in the Cowley and Lowell districts. Assessing themselves one and a half cents per head on approximately 23,000 sheep, members will be able to pay nearly half the salary of one hunter.

Unusual Diet.--Hunter Arthur D. Carr, of Mayoworth, Wyo., reports that in October he shot a coyote, which disgorged a freshly eaten, still squirming, headless rattlesnake 18 inches long.

Florida Conservation Bulletin Commends Rat-Control Work.--Referring to the rat-control work of the Biological Survey carried on in Florida by Carlyle Carr, leader, the November Monthly News Bulletin of the Florida Department of Game and Fresh Water Fish says: "One of the State Game Wardens, Mr. Newton Lewis, was instructed to accompany Mr. Carr, the survey representative, and to watch carefully the results of the preliminary work. The results were satisfactory, both from the viewpoint of destroying rats and not destroying birds and other valuable life. . . . Mr. Lewis makes the following report: 'Mr. Carr has finished his campaign in the East Glades and he certainly did a good job on the rats. I checked up behind him carefully and the only thing I found that he had killed, outside of thousands of rats, was two opossums. The buzzards came in by the hundreds and fed on the dead rats but we failed to find one dead buzzard. . . . I believe that the campaign has changed many people's opinion.' If the type of poison and the methods used by the Survey are more effective in destroying rats and are less harmful to useful forms of life than the poison heretofore used by the farmers and if the farmers can be induced to use the Survey's poison and methods, we believe that the results will be beneficial. The question is not, to poison or not to poison, but how to poison."

#### LAND ACQUISITION

Congratulations are extended to Mr. and Mrs. Dieffenbach on the birth of a daughter, Ann, on Friday, October 30.





Progress of Field Parties.--Bert K. G. Tousey, who has been assisting Chester W. Pe-core in the survey of the Lake Malheur Reservation, has been temporarily detailed to assist Carey H. Bennett in engineering work to determine the possibility of increasing the water supply on the Benton Lake Refuge in Montana.

The survey of the Swanquarter Migratory Bird Refuge in North Carolina having been completed, Charles S. Cook, Lawrence K. Hayes, David D. Pugh, and James W. Whitehead re-turned to Washington on November 5. Mr. Pugh and Mr. Whitehead left Washington again on November 13 to complete the work of surveying and marking the boundaries of the St. Marks Refuge, Fla., which was interrupted some time ago.

William T. Krummes and Howard J. Sargeant have completed examination work in Iowa and have been working in Louisiana.

Rudolph O. Gustafson and Peter J. Van Huizen have completed the area on which they were making an appraisal examination in Wisconsin. Mr. Gustafson has returned to the Wash-ington office, and Mr. Van Huizen has remained in Wisconsin to examine another area there.

Daniel H. Janzen has completed his examination of a proposed refuge in Missouri and is now at Great Bend, Kans., his official station, in connection with work on the Cheyenne Bottoms Refuge.

Copy Land Grants at Annapolis.--Albert Smith, jr., Miss Lois J. Rowse, and Kenneth C. Kern were in Annapolis, Md., November 4 to 14 obtaining copies of land grants in connec-tion with the survey of a proposed refuge area in Maryland. Oswald E. Recroft also joined them on November 12.

#### GAME AND BIRD CONSERVATION

Confers with Game Protectors.--W. R. Dillon was in New York City several days the first week in November conferring with United States Game Protectors P. S. Farnham, of Owego, N. Y., Albert Stadlmeir, of Pleasantville, N. J., and B. E. Smith, of Portland, Me., concerning the enforcement of the Migratory Bird Treaty Act in their districts during the present season. On November 20 and 21 Mr. Dillon visited the Susquehanna Flats near Havre de Grace, Md., and conferred with United States Game Protector O. D. Steele. Mr. Dillon states that, while previous to his visit a considerable number of ducks and geese had been reported on the flats, he saw only 4,000 to 5,000 ducks there and comparatively few geese. Hunters, he said, were obtaining poor bags. The Biological Survey motorboat Killdeer is operating on the Susquehanna Flats this year through the cooperation of E. Lee LeCompte, State game warden of Maryland.

Fire Damages Bureau Launch; Engineer Injured.--A disastrous fire occurred on the cabin launch used in connection with the enforcement of the migratory bird treaty act regulations on the Potomac River and Chesapeake Bay while the boat was lying at its dock in Washington on the afternoon of November 16. The cockpit, controls, steering wheel, and motor were seriously damaged. W. A. Chesser, engineer in charge of the boat at the time, was painfully but not seriously burned about the face and arms as a result of three explosions in the en-gine compartment. An investigation conducted immediately following the fire indicated a leak in the gasoline line which apparently had developed only a few hours previous to the conflagration. The harbor precinct police boat, equipped with a pumping apparatus, and the Washington Fire Department fire boat were on the scene of operation immediately and con-fined the fire to that part of the craft aft of the main cabin. Damage to the boat has been estimated at \$1,200 to \$1,500.

Protector Moved to South Dakota.--United States Game Protector F. A. Johnson has been





transferred from New Orleans, La., to Watertown, S. Dak., and is now located at 1017 Third Street, N. E., Watertown.

Coast Guard Will Aid in Enforcement of Game Laws.--All Coast Guard Stations on the Atlantic and Gulf Coasts have been instructed to report violations of the migratory-bird treaty-act regulations coming to their attention, according to information received from the office of the Commandant of the United States Coast Guard at Washington.

Prevent Forest Fire.--By quenching a small fire in a portable sawmill at about 4.15 a. m. on October 8, United States Game Protector O. D. Steele and United States Deputy Game Warden W. G. Trego, both of Cambridge, Md., probably saved a large area of pine timberland. En route to Hoopers Island, Md., they observed a light in the sawmill, located in the thick pines of Gum Swamp, and as they proceeded on their way saw that it came from a blaze. At the mill they found a brisk fire, which they succeeded in extinguishing with water from the boiler supply tank. A south wind of near gale force was blowing at the time, and the men thought that had they been a few minutes later not only would the mill have burned but also possibly several hundred acres of pine timberland.

Car Turns Over in Ditch.--Game Protector C. A. Liechhardt, of Portland, Oreg., narrowly escaped serious injury late in the evening of October 29 when his automobile, forced from the road by an approaching car, turned over in the ditch about 20 miles south of Tacoma, Wash., crushing the top, tearing off a wheel, and breaking all the glass. Mr. Liechhardt was badly bruised. The damage to his automobile, estimated at \$100, was covered by insurance.

Returns from Refuge Inspections.--Frank L. Earnshaw, assistant in reservations administration, returned to headquarters on November 23 after a 10-day tour of reservations along the coast of South Carolina, Georgia, and Florida. He visited the Cape Romain Migratory Bird Refuge, S. C.; the Savannah River Refuge, near Savannah, Ga.; the Blackbeard Island Reservation, Ga.; and the St. Marks Migratory Bird Refuge, Fla. Each of the refuges is occupied by considerable numbers of birds, he reports, the most conspicuous being wood ducks at the Savannah River Refuge and geese at St. Marks Refuge.

Elk Congregating at Winter Refuge.--The first elk observed this fall at the Elk Refuge, at Jackson, Wyo., were 18 cows and calves that appeared on October 20 at the Walton League addition. Since that date the number has been steadily increasing, and on November 14 Protector Almer P. Nelson reported that approximately 2,000 elk and apparently a large number of calves were on the refuge and adjacent foothills.

Visitors at Cape Romain Refuge.--On October 31, Protector James D. Pittman escorted the biology class of the Bishop England School of Charleston, S. C., over the northern part of the Cape Romain Migratory Bird Refuge, S. C., and to various near-by points.

Notes on Sullys Hill Preserve.--On November 12 Protector Wesley D. Parker fetched to the Sullys Hill Game Preserve, N. Dak., four white-tailed deer (three does and one buck), presented to the preserve by the Valley City, N. Dak., park authorities. The loss of one buffalo has been reported. Construction work on the preserve during the last month has included 300 feet of a cut-off dam, about 2,000 feet of water line, a concrete pump house, a drilled well with electric pump, and a pressure tank.

Appointment.--Andrew H. Dupre has been appointed a deputy reservation protector and United States deputy game warden at Cape Romain Migratory Bird Refuge, S. C.



Placed in Charge of St. Marks Refuge.--Paul T. Kreager, junior forester, of the Division of Land Acquisition, was detailed to this division on November 13 and placed in charge of St. Marks Migratory Bird Refuge, Fla., for a temporary period, authorized to enforce the migratory-bird conservation and treaty acts.

Duck Instinct.--A McGregor, Iowa, dispatch of November 2 says: "Duck hunters, returning home with empty bags, are attributing their ill-luck to a display of intelligence upon the part of the birds which are seeking safety in the areas of the upper Mississippi wild life refuge closed to hunting. Elsewhere there are no ducks, they assert. The refuge has been set aside to help save waterfowl extinction. Hunters contend that the ducks have learned these areas and are staying within them in vast numbers. The birds seem to know the reserves even to the exact line. No decoys can tempt them to cross it during the day time. At night they leave to hunt food in other waters."--Extract from the Daily Digest, vol. 43, no. 29, November 3, 1931.

San Francisco Inspector Returns from Canadian Study.--H. S. Swarth recently resumed his work as senior inspector of foreign birds at San Francisco, after returning from British Columbia, where since last July he had been conducting investigations on birds and mammals in the Atlin region for the California Academy of Sciences.

Quail Importer Visits Bureau.--Senora Soledad Morales de Learn, one of the principal importers of quail and other birds on the Mexican border, visited the Bureau on October 20 in company with her sister, Senorita Maria Alicia Morales.

Health Service Bars Shipment of Parrakeets.---A shipment of shell parrakeets, which arrived at New York from Habana, Cuba, on October 28, was refused entry by the Public Health Service on account of bad health conditions and ordered returned to the port of shipment.

Treaty-Act Cases Disposed of.--The following cases under the migratory-bird treaty-act were among those disposed of during the month of October: An offender arraigned in Federal court in Minnesota for selling and serving wild ducks as part of a meal was required to pay a fine of \$25. Three persons apprehended driving migratory waterfowl with a powerboat in Alabama were successfully prosecuted and fined \$15, \$20, and \$25, respectively. For offering for sale and selling wild ducks and doves, two defendants in Texas were fined \$50 each; in one case the fine was suspended because the accused had been fined in State court for the same violation. Two cases involving the killing of coots from a motor boat were disposed of in Tennessee by fines of \$50 and \$100.

Upper Mississippi Refuge Act Violators Fined.--A \$100 fine for unauthorized trapping on the Upper Mississippi River Wild Life Refuge was imposed in Federal Court at La Crosse, Wis., on November 9, on evidence obtained by Ranger Harley C. Lawrence. On the same day, upon a plea of guilty to shooting one merganser in the Winneshiek, a resident of Crawford County, Wis., was sentenced to pay a fine of \$100, and a commercial fisherman pleading guilty was fined \$25 for the unlawful taking of fish from a refuge area in Crawford County, Wis. Rangers Lawrence and Homer F. Hall, Protector B. J. Shaver, Deputy Miller, and former Deputy Berni obtained the evidence of the merganser shooting and Wisconsin State wardens that of the unlawful fishing.

Violations on Upper Mississippi River Refuge.--Although the hunting season on the Upper Mississippi Refuge this fall was characterized by unusually few infractions of the law, fifteen violations of a miscellaneous nature were dealt with during the past month. Two violators were arrested for trapping muskrats and one for trapping raccoons on closed areas,





one for illegally possessing wood ducks, two for killing a grebe, four for hunting after sunset, two for hunting on a closed area, one for unauthorized cutting and removal of trees from the refuge, and two for unlawfully possessing muskrat pelts. All except the last two cases will be presented for Federal prosecution, these having been disposed of in State court at La Crosse, Wis.; upon pleas of guilty, the defendants, in default of payment of fines imposed, were sentenced to serve 60 days in the county jail. Evidence in these two cases was obtained by Ranger Homer F. Hall and a Wisconsin State warden.





# THE SURVEY

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Vol. 12

Washington, D. C., December 19, 1931

No. 12

## THE SEASON'S GREETINGS

### Fellow Workers in the Biological Survey:

The year that is now closing has been one of accomplishment in the face of obstacles. The whole organization of the Biological Survey has had its work concentrated on two outstanding problems--the field methods of predator and rodent control, and the acute crisis confronting us in the waterfowl situation. We have emerged from both, we believe, and from the many controversies involved, in very good shape. The record for 1931 will show progress in our work and a better understanding of our problems throughout the country.

Because of reduced operating resources, the year 1932 may not record so great a further advance as we might desire. This very reduction, however, will stimulate all of us to the best possible achievement, utilizing to the utmost what resources we have. We are confident that in the year's work no member of the Survey will be found wanting in industry or in loyalty to the organization. We have a wonderful opportunity to advance the cause of wild-life conservation, with real constructive measures always in evidence. Where the destructiveness of injurious species must be curbed, we have the opportunity to do the job well and at the same time to demonstrate the fact that the underlying purpose of the Biological Survey is to conserve wild life for future uses, recreation, and inspiration, as well as for its own sake.

We all hope that 1932 will dispel the cloud of economic depression that has cast its gloom over our whole country and the rest of the world. By taking an optimistic view, by working for the greatest possible accomplishment, in spite of limited means, we can all do our part in surmounting any obstacles and discouragements that we may be called upon, as in the past, to face, both officially and personally.

With Christmas and the New Year close upon us, we wish to take this opportunity to extend to you collectively, instead of individually, as we have attempted to do in former years, and to the members of your families, the age-old message--A Merry Christmas and a Happy New Year. The members of the Survey in Washington join us in our greeting to the members of the field force. We are taking your goodwill for the deed in anticipating your reciprocal greetings; and at this time, when every energy is needed to reduce privation and alleviate suffering, we would appreciate your devoting the time and expense that individual greeting cards have heretofore required, to helping those who are unemployed and in need of assistance.

We sincerely hope that every member of the Survey, after sharing with the less fortunate, will still be in position to enjoy the good things of the Christmas season. May we all proceed with high courage and determination into the new year, and may it be indeed happy and fruitful for all of us.

*Paul G. Redington*

*W. C. Henderson*

## GENERAL NOTES

Migratory-Bird Agreement Signed in Europe.--Information based on a dispatch from the American charge d'affaires at Stockholm, Sweden, has been received by the Biological Survey from the State Department that an agreement between Sweden and Denmark concerning certain regulations for the protection of migratory birds has been signed by the Minister for Foreign Affairs of Sweden and the Danish Charge d'Affaires ad interim. Signatures were affixed at the Ministry for Foreign Affairs, at Stockholm, on October 9, 1931. The importance of international protection of migrant birds thus progresses a step further along the lines adopted by the United States and Great Britain in 1916 for the protection of birds that migrate between the United States and Canada. The Biological Survey has taken steps to obtain further information regarding the details of the new agreement.

Participate in Game Conference.--The Biological Survey was represented at the eighteenth annual American Game Conference held in New York December 1 and 2 under the auspices of the American Game Association, by the Chief, the Associate Chief, and members of five divisions. Four of the Survey officials and one of its cooperators also spoke at the conference. Mr. Redington addressed the afternoon session on December 1 on "Wild-Life Activities of the Bureau of Biological Survey, 1931"; and again at the banquet, the closing event of the conference, on the waterfowl situation. On the evening of December 2 he also broadcast through a nation-wide network a talk on "The Plight of Our Wild Fowl." Wallace B. Grange spoke at the opening session on "Demonstrations in Upland Game Management," and Dr. R. G. Green, of the University of Minnesota, who has been conducting investigations in cooperation with the Biological Survey, discussed "Wild-Life Disease Studies." Doctor Green's address was discussed by Dr. J. E. Shillinger, F. C. Bishopp, of the Bureau of Entomology, and E. R. Kalmbach. Others from the bureau who attended the conference were H. P. Sheldon, W. R. Dillon, F. L. Earnshaw, Dr. W. B. Bell, F. G. Ashbrook, and F. C. Lincoln.

Shows Records Favor Government Cars for Official Travel.--Writing in "The Administrative Bulletin" for November, 1931, on "Government vs. Private Automobiles for Official Travel," E. J. Thompson reports that records maintained by the Biological Survey favor Government-owned automobiles where they are used extensively. The advantages of Government ownership Mr. Thompson finds in exemption from State taxes on gasoline and lubricants; in discounts on repair parts, accessories, and automobiles; and in the fact that the cost is on an actual-expense basis, whereas mileage reimbursement must be high enough to protect private owners against loss.

Official publication received during the month: "Fur Laws for the Season 1931-32," by H. P. Sheldon and Frank G. Grimes, with introductory section by Frank G. Ashbrook. Farmers' Bulletin 1685-F. 30 pp. Dated November; received December 11.

## BIOLOGICAL INVESTIGATIONS

Examining Bureau Skull Collection.--Dr. Chester Stock, of the California Institute of Technology, is examining skulls of pumas and jaguars in the Biological Survey collection, in connection with his studies of the fossil fauna of the Rancho La Brea, Calif.

Beavers Planted in North Carolina.--Vernon Bailey has just returned from a trip to Asheville, N. C., where he took three live beavers to be placed on the Pisgah National Forest and Game Refuge near there. As the ponds where the beavers were to be put were found to be unsafe, the beavers were placed instead in a suitable and well-protected pond on the near-by Biltmore Game Refuge. Thomas D. Burleigh, engaged there in the bureau's forest wild-life studies, can conveniently look after the welfare of the beavers and study their habits and needs. These beavers were taken in Pennsylvania, where they descended from good Canadian



stock planted there several years ago. It is the intention to protect them until eventually they increase, and then to use the surplus for restocking suitable ponds and streams in western North Carolina. Beavers are useful in holding flood water, improving trout streams, adding interest to the forest, and, when their numbers have increased rapidly, in yielding a valuable fur supply. It is planned that no trapping will be allowed in this area for many years. Only trapping of live animals for the humane and intelligent handling of the surplus and for restocking is recommended in any case. The native beavers have been extirpated from this part of the country through unrestricted trapping, and it is hoped that this colony will be fully protected until such time as their abundance warrants the removal of surplus stock.

Enters Izaak Walton League Work.---S. B. Locke, associate biologist, in charge of investigations on the relation of wild life to forests under the McNary-McSweeney Act, who has been stationed at the Intermountain Range Forest Experiment Station at Ogden, Utah, resigned, effective November 30, 1931, to become conservation director of the Izaak Walton League of America, with headquarters in Chicago. While the loss of Mr. Locke's services is regretted, congratulations are extended to him on the opportunities afforded in the enlarged field of usefulness that he now enters.

#### FOOD HABITS RESEARCH

Inspect Proposed Refuge Site.---Johnson A. Neff, stationed at Marysville, Calif., in company with Game Protector George E. Tonkin recently inspected an area in California to consider its value as a migratory-bird refuge. Local reports indicated that the maximum number of wild fowl on this area could not be seen until later in the season.

To Observe Magpie Drive.---Chas. C. Sperry, of the Denver Food Habits Laboratory, left on December 6 for Casper, Wyo., where he planned to spend a week or ten days observing a magpie campaign and making studies relative to the food of predatory mammals.

Investigates Reported Gull Depredations.---From December 1 to 4, J. Paul Miller, of Amherst, Mass., was in Newburyport and vicinity investigating damage to shellfish, which had been attributed to gulls.

Scattered Grain Makes Crow Control Impossible.---Finding that the amounts of scattered grain and standing crops left in the field were so great as to make control measures against crows useless, E. R. Kalmbach and S. E. Aldous terminated their crow campaign in Oklahoma, Mr. Kalmbach returning to Washington and Mr. Aldous to Denver.

Addresses Extension Conference.---At the weekly extension conference of the Office of Cooperative Extension Work on December 9, Mr. McAtee spoke on "Agriculture as Affected by Bird Life."

#### FUR RESOURCES

Talks to School Group.---On December 2, Mr. Ashbrook talked on furs and fur farming to about 300 students of the Central Needle School in New York City. Publications on fur farming were distributed also.

Inspects Fur Station.---Mr. Ashbrook made a trip of inspection to the U. S. Fur-Animal Experiment Station, at Saratoga Springs, N. Y., on December 3 and 4. A number of pelts of



very good quality have been taken, he reports, and considerable time is being devoted to crossbreeding of foxes and feeding experiments.

Attends Meeting and Visits Fur Farms.--Dr. Karl B. Hanson attended a meeting of the New England Mink and Fur Breeders' Association, at Portsmouth, N. H., during the latter part of November, and delivered a talk on the experiments conducted at the experiment station, particularly on the breeding work in progress. He also conferred with many of the fur farmers regarding the management of fur animals in captivity. En route back to Saratoga Springs, N. Y., Doctor Hanson stopped at several fur farms and discussed fox diseases and feeding problems and demonstrated making and using tracheal brushes. In Boston, Mass., he consulted with Dr. W. E. Castle, of Harvard University, regarding experiments on the crossbreeding of foxes.

Rabbit Meeting in Fontana.--At a meeting of the San Bernardino County Farm Bureau held at the Rabbit Experiment Station, at Fontana, Calif., on November 20, Dr. A. W. Bellamy of the University of California, a cooperator of the bureau, spoke on "Genetics."

Extract from Chief's Annual Report Mimeographed.--To meet requests for copies of the annual report of the Chief of the bureau received from people interested chiefly in fur production, an extract containing information on "Research in Fur-Animal Production" has been mimeographed, and copies are available for distribution.

#### DISEASE INVESTIGATIONS

Disease Investigations in California.--Dr. F. D. McKenney, who has been transferred to Los Angeles, Calif., to conduct investigations on the diseases of rabbits, will also be the bureau's representative in that region on all matters relating to diseases of wild life and fur animals. En route west Doctor McKenney assisted in the inspection of animals at the American National Fox and Fur Breeders' Association show in Virginia City, Minn., and conferred with investigators at the Mayo Clinic at Rochester, Minn., on certain phases of disease control.

Cooperator Visits Washington and New York.--On his way to the American Game Conference in New York, Dr. R. G. Green, of the University of Minnesota, who is cooperating with the Biological Survey in the study of diseases of fur animals and wild life, visited Washington for a conference with officials on details of the investigations being conducted under the cooperative agreement.

#### PREDATORY-ANIMAL AND RODENT CONTROL

New Trap Attachment Devised.--Albert M. Day, after consulting with trap manufacturers, has been trying out in the field a trap attachment devised to make it impossible for the smaller animals to be caught in traps set for the larger predators. Alterations have been made from an original design made by Mr. Day, and it is thought that after these field trials the device can be further improved so as to make trapping operations more selective than at present.

Work Staggered to Continue Employment for Hunters.--Because of insufficient funds to continue full-time employment of all hunters in some of the districts it has become necessary during the last six months to discharge some or to use their services for only a part of each month. In several cases the matter has been submitted to the hunters themselves, and

in accordance with their decision arrangements have been made to give most of the hunters employment during the larger part of each month rather than employ only part of them for the entire time and discharge the remainder.

Heavy Infestation of Cotton Rats in Florida.--In the campaign for the control of cotton rats conducted in Dade County, Fla., during the latter part of November, 263 dead cotton rats were found in the first check on 1 acre of a sweet potato field. Two days later the owner of the farm on which these were found counted 250 more on the same area, making a total of 513 to the acre.

Predators Still Abundant.--Predatory animals are still abundant in many sections, as illustrated in a report from C. R. Landon, leader for the Texas district, that during November seven men in his district made catches of over 100 predatory animals each--a record considered extraordinary by the division officials in Washington. Two of the seven hunters included a mountain lion in their catches, while the rest caught only coyotes and bobcats. Fourteen other hunters in the Texas district caught 50 or more animals each.

#### LAND ACQUISITION

Malheur Suit Brought to Hearing.--The suit of the United States versus the State of Oregon involving title to the beds of Malheur, Harney, and Mud Lakes, which were set aside as a bird refuge by Presidential proclamation in 1908, was brought to a hearing at Burns, Oreg., on November 2, before a special master appointed by the United States Supreme Court. In connection with the case the Biological Survey has identified all Federal surveys around the lakes and has prepared topographic maps of the lake beds. These surveys were begun last April under the direction of Chester W. Pecore, cadastral engineer in this division. Decision will be made by the United States Supreme Court.

Detailed from Malheur to Benton Lake.--Chester W. Pecore, who has been engaged in the survey work on the Malheur reservation project, was temporarily detailed on November 23 to the Benton Lake project, where he will inspect the work being done by Carey H. Bennett and assist Mr. Bennett in determining methods of increasing the water supply.

In Washington for Office Work.--On November 20 Daniel Janzen left Great Bend, Kans., for Washington, D. C., where he is now engaged in office work incident to land examinations and appraisals that he has recently made for the Cheyenne Bottoms project and for other refuges.

Commission Authorizes 10 Acquisitions.--The Migratory Bird Conservation Commission, on December 3 authorized acquisition of 43,227 acres by the Biological Survey for 10 migratory game-bird refuges in New York, Maryland, North Carolina, South Carolina, Florida, Nebraska, North Dakota, Wyoming, and Nevada, previously surveyed by biologists and land-valuation experts of the bureau and approved by the department as units in the nation-wide system of refuges authorized by Congress. Including these lands, 154,744 acres have now been authorized by the commission for acquisition by lease or purchase; and, in addition, 65,970 acres have been set aside by Executive order or Presidential proclamation, making a total of 220,713 acres established or in the process of being established as inviolate sanctuaries. The new acquisitions will cost the Government \$5.74 an acre, on the average; the average cost per acre for all lands approved for purchase under the act is \$4.30. In the following table showing the acquisitions for migratory-bird refuges approved by the commission on December 3 the acquisitions constituting new refuges are underscored:

<u>Refuges, by States</u>	<u>Acres</u>	<u>Remarks</u>
New York:		
<u>Hempstead</u> . . . . .	2,274	On Atlantic coast flight route of waterfowl; near New York City.
Maryland:		
<u>Blackwater</u> . . . . .	10,000*	On Eastern Shore of State; includes marshes where black ducks and blue-winged teal breed in greater numbers than on any other area south of Labrador.
North Carolina:		
<u>Swanquarter</u> . . . . .	3,600	Additions consolidating holdings; total now 25,000* acres.
South Carolina:		
<u>Cape Romain</u> . . . . .	414	Additions consolidating holdings; total now 33,000* acres.
Florida:		
<u>St. Marks</u> . . . . .	5,285	Additions consolidating holdings; total now 19,167 acres.
Nebraska:		
<u>Crescent Lake</u> . . . . .	1,688	Includes extensive water areas; tends to round out boundaries; total now 40,000* acres.
North Dakota:		
<u>Long Lake</u> . . . . .	4,269	Nesting ground; first Federal refuge in State.
Wyoming:		
<u>Bamforth Lake</u> . . }	3,465	Refuges 12 miles apart; first acquisition in State; important because few water areas are available to birds in Wyoming.
<u>Hutton Lake</u> . . }		
Nevada:		
<u>Fallon</u> . . . . .	17,902	Additions; total area now 31,288 acres.

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\* Approximately.

#### GAME AND BIRD CONSERVATION

Surplus Big-Game Animals To Be Sold.--Bids have been called for on 75 buffalo, 42 elk, and 15 mule deer, surplus animals in herds at the National Bison Range, Mont.; Wind Cave Game Preserve, S. Dak.; Sullys Hill Game Preserve, N. Dak.; and Niobrara Reservation, Nebr.

Notes from the Elk Refuge, Wyo.--Reports have been received of about 4,500 elk observed on and near the Elk Refuge, Wyo., on November 30. The scarcity of waterfowl in the vicinity of the refuge this fall was noticeable, Protector Almer P. Nelson states. The number seen on the refuge and on the adjacent Flat Creek Swamp, Mr. Nelson believes, indicates that there were 50 per cent less ducks there this season than a year ago. Local hunters reported small numbers of ducks in comparison with other years and expressed themselves as being in full accord with the shortening of the hunting season. Few ducks were killed in Jackson Hole this fall.



Appointment.--Edward R. Ragatz, of Potosi, Wis., has been appointed United States deputy reservation ranger and United States deputy game warden and stationed at the Upper Mississippi River Wild-Life and Fish Refuge.

Importation of Fur-Bearing Animals.--There has been considerable demand for permits for the importation of fur-bearing animals this fall, especially minks and fitches; up to December 10 permits had been issued for the entry of 416 minks and 151 fitches. The minks are being brought from several Provinces in Canada and the fitches from Europe and Canada.

Christmas Rush in Bird Importations.--To meet the demands of the Christmas trade, importations of foreign species usually increase during the last few weeks of the calendar year to more than double the number ordinarily brought in at other seasons in the same length of time, and this year is no exception. Up to December 10 permits were issued for approximately 70,363 birds, including 1,706 Hungarian partridges and 59,758 canaries, making an average of more than 2,500 birds a day since November 15. Among the more interesting birds brought in recently have been 11 Fiji Island pigeons (*Columba vitiensis*), at San Francisco, and 5 crown finches (*Coryphospingus pileata*) from Central America, at New York, via Hamburg, Germany.

Killing One Duck Costs Violator \$150.--A fine of \$150 was assessed on November 9 in Federal court at La Crosse, Wis., against a defendant charged with killing one wild duck in Crawford County, Wis., last March. Protector Shaver and Deputies H. C. Lawrence and H. A. Miller obtained the evidence on which the prosecution was based.

Power-boat Hunter Sentenced to 30 Days.--For killing migratory waterfowl from a power boat on the Ohio River in Union County, Tenn., on October 17, 1930, a hunter arraigned in Federal court at Paducah, Ky., on November 24, 1931, entered a plea of guilty and was sentenced to serve 30 days in jail. The evidence in the case was obtained by United States Game Protector Harry Barmeier, of St. Louis, Mo.

Five Get 30 Days Each for Illegal Possession.--Information was received by telegraph on December 8 from Game Protector George M. Riddick that 5 defendants in Federal court at New Orleans, La., were given jail sentences of 30 days each for possessing ducks prior to the opening date of the season this fall.

Fined for Hunting Ducks before Noon on Opening Day.--The first prosecutions and convictions for hunting wild ducks prior to 12 o'clock noon on the opening day of the season were obtained in Federal court at Pierre, S. Dak., on October 9. Three defendants arraigned on this charge entered pleas of guilty and were fined \$25 each. Evidence in these cases was obtained by Federal deputy C. H. Schemmer.

